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SOAP

and SANITARY CHEMICALS

In this issue...

Germicidal soaps expand market on new G-11 items

* * *

Soap manufacture reviewed since 1900 in U. S.

* * *

Strip fly control method for dairy barns described

* * *

Shampoo damage judgment reversed on appeal.

* * *

Cover photo...Neil McElroy, president, Procter & Gamble Co. and president of the Association of American Soap & Glycerine Producers, meeting in New York, January 31.

JANUARY 1951

Original Solvay Plant

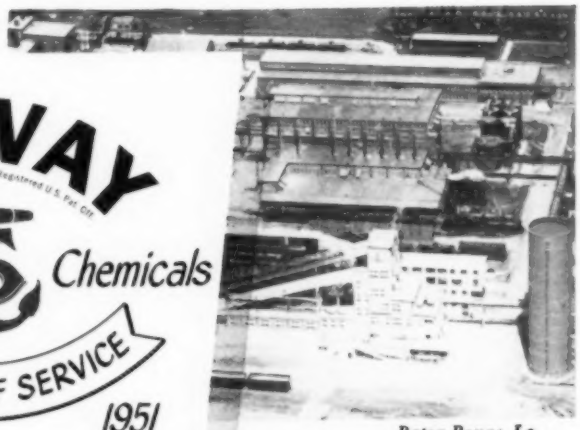
70 Years of PROGRESS

Progress can be measured in many ways...

Our progress, for example, might be measured by comparing our original soda ash plant to our five great plants that today have the world's greatest output of alkalies and associated chemicals. Or we might compare our early technical and research facilities with our present laboratories—the world's largest and best equipped for alkali research.

But the way we like to measure our progress is by the steady year-by-year growth in the number of firms and individuals who continue to "specify Solvay." It is *their* feeling toward Solvay and Solvay Products that has made this progress possible.

Hopewell, Va.



Baton Rouge, La.

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1881 1951

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Ortho-dichlorobenzene

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Methanol • Formaldehyde

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Ammonium Bicarbonate
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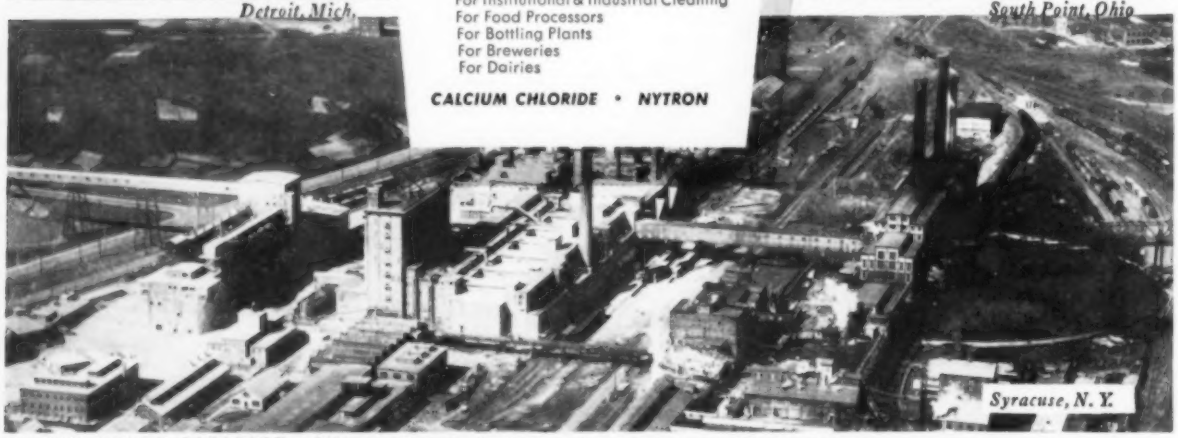

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ONLY ONE

Only FULD makes FULSHINE . . . and only FULSHINE gives you unequalled, unchanging quality! FULSHINE is Alkali-Proof* . . . absolutely neutral and wax-free . . . contains a chemical reserve which maintains a neutrally balanced solution *and actually prevents the freeing of any harmful alkali.* Use FULSHINE without rinsing to produce a beautiful polished effect . . . or rinse for a non-polish finish. Test FULSHINE against any other cleaner you choose and see the results for yourself.

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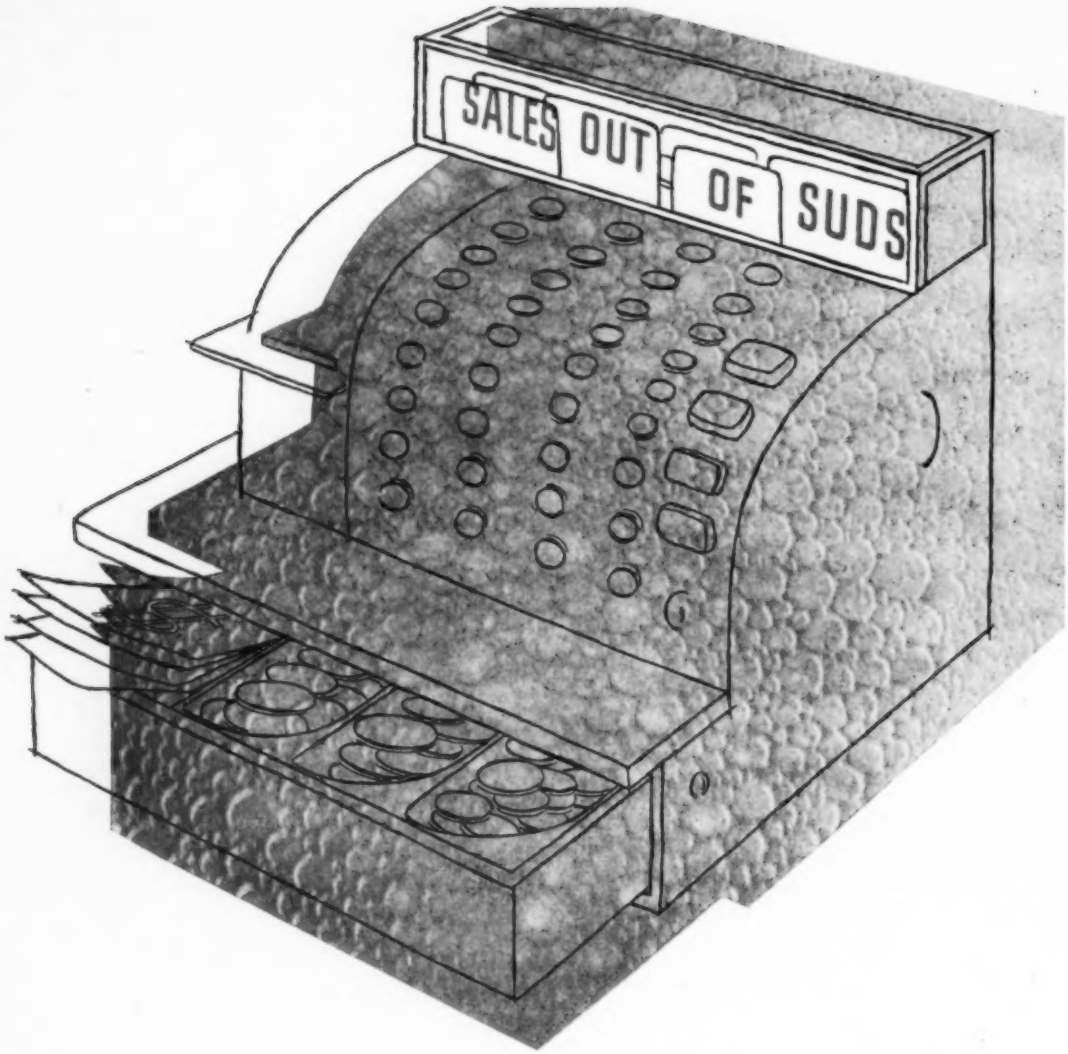
Liquid Soaps, Floor Seals, Floor Treatments, Deodorant Blocks, Liquid Deodorants, Plumbing Specialties, Special Cleaners, Self-Polishing Waxes, Powdered Waxes, Oil Soaps, Liquid Cleaners, Disinfectants, Insecticides, Metal Polishes, Furniture Polishes, Deodorant Block Holders, Soap Dispensers.



If your market demands a cleaning compound that delivers abundant suds, Monsanto Santomerse No. 1 will mean *extra* sales for your product. Santomerse No. 1 makes mountains of suds in water as soft as dew or as hard as the salty sea.

Santomerse No. 1 can be blended with other detergents and builders, even in acid media such as used in dairy cleaners. Santomerse No. 1 is high in detersive action in either hot or cold water. Its applications in household and industrial cleaning compounds are almost without limit.

If you have a problem in building a cleaning compound for specific applications or particular markets, consult Monsanto. Technical counsel is yours without cost or obligation. Or, you may find the answer in Monsanto's booklet, "*Santomerse No. 1 All-purpose wetting agent and detergent.*" A copy will be sent free upon request. MONSANTO CHEMICAL COMPANY, Phosphate Division, 1700 South Second Street, St. Louis 4, Missouri.

DISTRICT SALES OFFICES: Birmingham, Boston, Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Los Angeles, New York, Philadelphia, Portland, Ore., San Francisco, Seattle. In Canada, Monsanto (Canada) Ltd., Montreal.

Why you'll prefer Santomerse No. 1

CONTROLLED DENSITY — Manufactured in three densities . . . gives you bulking to suit your products and markets.

COMPATIBILITY — Santomerse No. 1 is compatible with other detergents and builders.

EASY BLENDING — Available in flakes or granules, giving you a selection to blend readily with other ingredients without stratifying.

PROTECTED QUALITY — Santomerse No. 1 is shipped in wax-lined drums to protect quality in transit and storage.

PROMPT SERVICE — Santomerse No. 1 . . . warehoused in 13 cities, coast to coast . . . will be shipped promptly from a point near you.

Santomerse Reg. U.S. Pat. Off.

MONSANTO
CHEMICALS FOR PLASTICS

SERVING INDUSTRY . . . WHICH SERVES MANKIND

SOAP and SANITARY CHEMICALS

Volume XXVII
Number 1
January 1951

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In times like these
It's Easy to Forget Fundamentals

Demand for Caustic Soda is what the needs of a thousand-odd users can create. Supply is what a relatively few plants can possibly produce. One can mushroom overnight, the other can grow only slowly.

In times like these, it's very human to focus upon unfilled needs, to forget how far performance exceeded expectations.

Through all the recent critical months, our plant has produced beyond its "rated capacity". Not every customer has gotten all that he hoped for, much less all that he could use. But equipment has stayed "on the line" longer than conservative maintenance dictated. Cell units have been replaced in "nothing flat". Cars have been spotted, loaded and shipped faster and oftener than 'old timers' ever believed possible. Net, we think our folks have done a darn fine production and distribution job.

True, there still is a Caustic Soda "shortage". But "shortage" is a relative, ever-changing word. As new capacity comes in; as all plants produce 100%; as a higher wisdom specifies essentiality of use, things should get better.

Better, that is, if we all concentrate on the size of the doughnut instead of the hole!

Westvaco
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WESTVACO CHEMICAL DIVISION
GATX 64292
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BIGGEST NEWS in the INDUSTRY!

ALL-WEATHER-SLIP-PROOF

CETOX

HYDRAOXATED CARNAUBA

SUPER SAFE FLOOR WAX

NO SILICAS OR OTHER ABRASIVES USED!

★ ITS HYDRAOXATED SUPER SAFE AND SUPER LUSTROUS!

Here's an entirely new, dramatic floor wax development. Amazing, perfected Super Safe CETOX. Now a new set of standards for floor wax performance is yours. Old fears of shiny floors are gone forever. Every floor may now be super lustrous and super safe—even under tracked in rain, snow, or sleet. By hydraoxation the slip is taken out of the carnauba. Actually 26% to 36% safer than anti-slip wax standards . . . CETOX *is truly super safe underfoot!* It resists soil, wear, and spilled water. Too, its self-lustre is startling. *Note! Freezing cannot harm CETOX.* Watta product for profits and progress!

Listed anti-slip floor treatment material by Underwriters' Laboratories, Inc.

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when

WEIGHT

is important

Try the new high density ULTRAWET SK bead. Another tailor-made Atlantic detergent developed especially for the compounder.

Now you can have the advantages of a bead in dry mixing detergents without materially affecting the weight of the product you normally pack in your container. With high density ULTRAWET SK you have a product which is free-flowing even in humid weather . . . easier and more uniform in mixing . . . lighter in color with improved appearance in your finished product.

Where increased bulk is important, regular ULTRAWET SK is the answe· to obtain the above advantages in dry mixing. You'll like these *dedusted* beads that *cost you no more.*

These are just two of the Atlantic ULTRAWETS—a family of alkyl aryl sulfonates tailor-made for particular jobs. We'll be glad to send you a brochure which will give you the facts about the whole ULTRAWET family. The Atlantic Refining Company, Chemical Products Section, 260 S. Broad St., Philadelphia 1, Pa.

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Hy-white cleans WHITE WALL TIRES

whiter, brighter, faster at lower cost per application!

Service stations, garages, car owners all over America report:

✓ A WHITER TIRE WALL
—whiter than when new. Removes grime, curb scuff-marks, rust and grease stains.

✓ QUICKER, EASIER TO APPLY
Rub on with soft brass-wire brush (supplied), then rinse off.

✓ COSTS LESS TO USE
Only a small amount needed and each application lasts longer.

AVAILABLE
in 1 lb., 10 lb., 50 lb., 300 lb. and 550 lb. containers.

APPLICATOR INCLUDED
Soft brass-wire brush included with case of six 10 pound cans.

Reports From Coast to Coast verify that HY-WHITE out-performs any other whitewall tire cleaner—BAR NONE. "The oldest is still the best." Bleaches out white tire walls to a pure snowy white—*whiter than when new!* Does it with a minimum of labor—and SAFELY—because free from harmful alkalis. It's still the very finest white wall tire cleaner you can buy or apply. Used since the introduction of white wall tires and far surpasses any similar product in the field. Proved on hundreds of thousands of tires.

Hysan PRODUCTS CO., 932 West 38th Place, Chicago 9, Illinois

tonic... *for tired brands*

Here are detergency values
that makers of cleaning compounds
use to establish leaders.
They are obtainable conveniently *and* at low
cost from Metso. Check over these
ten advantages that will help you to boost
Profit and Quality.

1. Uniform cleaning strength
maintained at high degree of activity.
2. Soluble silica component
protects sensitive surfaces.
3. Fast wetting action.
4. High deflocculating power.
5. Prevention of re-deposition of dirt.
6. Attractive white, free-flowing granules.
7. Uniform high quality.
8. Mix readily with soaps, phosphates,
synthetic detergents and other alkalis.
9. Conveniently packaged in 100 lb. bags
and re-usable drums.
10. Economical.

We are holding for your request a copy of Bulletin 17-2 which describes the Metso Silicated Detergents and other PQ Dry Soluble Silicates which are of interest to formulators of cleaning compounds.

Metso Detergents

PHILADELPHIA QUARTZ COMPANY
1152 Public Ledger Building, Philadelphia 6, Pa.

Be sure you've got the right one . . .

When you make dry cleaning soaps Helioline "S"* is the right Woburn Fatty Acid for you

Helioline "S" is the double distilled fatty acid recommended for soaps and detergents when light colored products of minimum residual odor are desired. Helioline "S" reduces processing and operating costs, because it saponifies to completion rapidly, with no need for salting out.

HELIOLINE "S"

Specifications	Maximum	Minimum
Acid Number	200	195
Iodine Value (wijs)	125	110
Titre °C	24	20
Color (Lovibond 5¼")	3R	—
Moisture and Volatile	0.5%	—

Typical Composition	% Total Fatty Acids
Palmitic and Stearic Acids	9.0
Oleic Acid	49.0
Linoleic Acid	42.0

Six advantages to using Fatty Acids

1. **Simplicity**
   The manufacture of soaps from Fatty Acids is not a difficult or complicated procedure.
2. **Better Color**
   Soaps of an excellent color are produced from Fatty Acids because foreign matter and dirt particles, present in the original raw oils, have been eliminated.
3. **Time Saving**
   The time of saponification is greatly reduced, since the glycerine is already removed, eliminating the need for the long "salting out" operation.
4. **No Shrinkage**
   The entire fat component goes into the soap with Distilled Fatty Acids, while, with oil, at least 5% is lost in glycerine.
5. **Economy**
   Lower labor and equipment costs result, as well as a saving in steam, because the same volume of soap is produced in less time (or a much larger volume in the same time).
6. **Better Control of the Finished Soap**
   Fatty Acids allow for complete saponification with an excess of only about 0.12% alkali. Woburn's rigid control system assures the soap maker of a more uniform product as the starting point for manufacture.

It's always to your advantage to use Woburn Fatty Acids

WOBURN Dependable PRODUCTS

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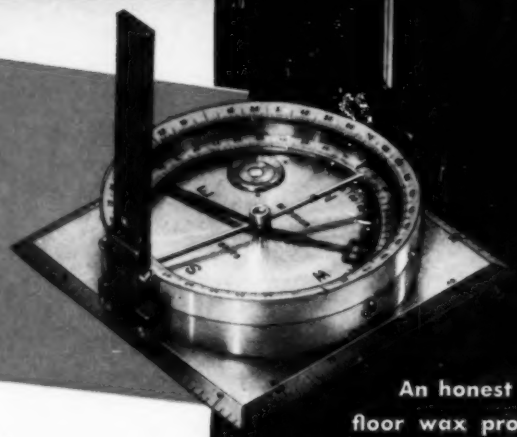
WOBURN CHEMICAL CORP. (N. J.)

There's a Woburn fatty acid for every soap need!

A GUIDE

TO WAX PRODUCTS PURCHASING FOR PRIVATE BRAND RESALE



An honest appraisal of floor wax products as we see it is offered to guide wax buyers who want the best quality money can buy...

SELF POLISHING WAXES

Candy's Supreme—Candy's Supreme Special AS

Candy's DeLuxe—Bright Beauty

Four floor waxes that *are* all-around top quality for any given traffic condition. Each imparts the finest protection and beauty to floors for which they are best suited.

Bright Beauty FLOOR CLEANER

An outstanding material for removing even the heaviest wax film and dirt.... Brings neglected floors "back to normal." The *right* cleaning agent to insure the most efficient floor maintenance.

Bright Beauty CREAM FURNITURE POLISH

A cream furniture polish that spreads easily, polishes without excessive effort and imparts a deep impressive lustre. Too, it permits *repeated repolishing* with a dry cloth saving reapplications time and again; truly a very economical polish of very highest quality.

Bright Beauty PASTE WAX

A paste wax that is properly blended and refined from excellent quality solids and solvents that produce the best drying time and thorough evaporation. A wax that is easy to handle, having "creamy" consistency and stability throughout its stocking and usage period.

Bright Beauty LIQUID (spirit) PREPARED WAXES

Complete line of spirit dissolved waxes that meet a wide variety of demands for durability, color and types of usages. Each its own "Drv-Cleaner," they keep a surface waxed with a superb protective coating necessary to many difficult surfaces such as certain floors (where adaptable), bars, wallpaper, etc.

Bright Beauty GLASS POLISH & CLEANER and SILVER POLISH

As a Glass Cleaner (pink color) it applies evenly with little effort, wipes off easily with negligible "powdering" and produces an undeniable "feel" of cleanness to glass that is actually true in fact. Different in color only as Silver polish, it imparts a highly desirable lustre to all silver *without* abrasion and can even correct the abuses of scratchy, "quick-polish" inferior products.

Bright Beauty DANCE FLOOR WAX

Basic advantages are freedom from "balling up," thus does not gather dirt and impregnate the floor with hard spots difficult to remove ... also is free from dusty effects. Adds the protective quality to expensive ballroom floors that means more "floor-years" to users everywhere.

Bright Beauty Heavy Duty PASTE CLEANER

Really *cleans* and *scours* more effectively and quicker than most scouring powders. Depending on application, it can clean to perfection even painted walls to provide a suitable repainting surface. 100% active, free from excessive abrasive quality, it frees almost every surface from all forms of foreign matter to perfection.

1. BEAUTY AND DURABILITY

should be considered together. Initial appearance is important, but for a waxed surface to remain beautiful it must be durable. Durability depends not only on resistance to the abrasion of traffic, but even more so on resistance to the collection of dirt and to discoloring traffic marks. Durability is really measured by how long the waxed surface maintains a nice appearance before the necessity of complete removal and re-waxing.

2. ANTI SLIP

qualities are necessary in a good wax as a matter of safety underfoot. This important quality does not necessarily require the sacrifice of beauty and protection which are the foremost original reasons for the use of a wax. Look for the proper balance—a wax film which is not excessively slippery yet which is not tacky and does not excessively collect dirt.

3. WATER RESISTANCE

is important, particularly when considering the possibility of wet traffic and the necessity for frequent damp mopping for the purpose of removing surface dirt. Overdoing this quality means greater difficulty in applying multiple coats of wax and may seriously increase the difficulty in removal when complete cleaning and re-waxing is necessary. Water resistance is important, but so is the quality of removability.

4. SOLID CONTENT

when expressed in percentage is not nearly as important as the *quality* of the solid content. When considering good quality, 12% of solids answers most needs for good planned maintenance programs. Two applications of 12% will give better results than one of 18%. However, the more concentrated material is useful for some programs of maintenance and particularly on "washed-out" floors, etc. Over-waxing should be avoided so that periodic complete removal will not be too difficult.

5. CARNAUBA WAX

is still the most important basic ingredient in our floor waxes. When refined and compounded with other important ingredients and "KNOW HOW," it aids materially in producing the most important features of a good floor wax... ALL AROUND QUALITY OF PERFORMANCE.

● ALL AVAILABLE FOR PRIVATE BRAND ONLY

We do not compete with our jobbers for consumer sales. We sell only to distributors, except for experimental accounts in Chicago essential to research.

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2515 W. 35th ST., CHICAGO

ARMOUR *Chemical Division*

Fatty Acids
Long-Chain Fatty Acid Derivatives
Industrial Oils

How Neo-Fat Fatty Acids cut costs of soap production

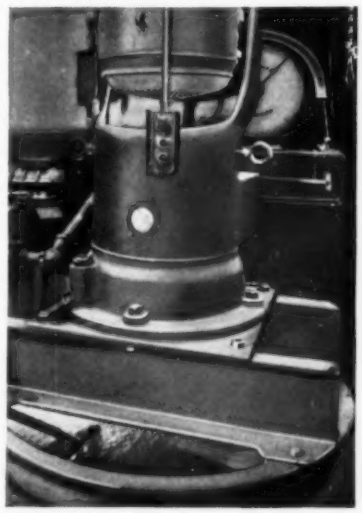
During the past few years there has been a definite trend toward the increased use of fatty acids in the manufacture of soap. They have been used to replace natural fats and oils which have heretofore been considered indispensable.

The Neo-Fat fatty acids, made possible by Armour's patented fractional distillation process, offer many distinct advantages to soap manufacturers.

Faster Saponification – One of the most important advantages of Neo-Fat fatty acids is that much faster and much easier saponification can be obtained than with natural fats and oils. This means that more batches of soap can be obtained within the same period of time. Thus the soap manufacturer is able to expand his production as a result of the greatly increased equipment turnover. The economy is evident, since volume is increased while equipment cost, labor cost and many overhead costs remain constant.

Higher Yield – The saponification with fatty acids is not only faster, but is also more complete. This characteristic of fatty acids results in a better finished and more neutral soap. Other things being equal, the actual yield of anhydrous soap obtained when using Neo-Fat fatty acids will be consistently higher.

Greater Uniformity – Because the manufacture of fatty acids is a carefully controlled process, and a uniform fatty acid can be supplied, greater uniformity of the finished soap is obtained. Another important factor is that during the distillation of the Neo-Fat fatty acids practically all of the unsaponifiable matter and impurities are removed.



Armour produces 15 fatty acids particularly suited to soap manufacture, including:

	Titer	Neutralization Value	Iodine Value (WIJS)	Color
Neo-Fat 3	23.0°C.	198	120	2½ NPA
Neo-Fat S-142	17.0°C.	190	130	2 NPA
Neo-Fat D-242		173		WG-M Rosin Scale
Double Distilled Cottonseed Fatty Acid	37.0°C.	200	105	2 NPA
Double Distilled Corn Oil Fatty Acid	30.0°C.	199	110	2 NPA
Double Distilled Soybean Fatty Acid	24.0°C.	198	135	2 NPA
Double Distilled Animal Fatty Acid	40.0°C.	197	60	2 NPA
Double Distilled Coconut Oil Fatty Acid	28.0°C.	254	12	1½ NPA

Quaternaries as Germicides

Arquads is the trade name given to a series of quaternary ammonium salts manufactured by the Armour Chemical Division. Members of the series vary as to the length and number of long-chain alkyl groups attached to the nitrogen atom. This enables the user to select the Arquad best suited to his purpose.

As germicides, Arquads are particularly useful in water dispersions or solutions. Killing dilutions may be as low as 1 part of active material per 30,000 parts of water. Quaternaries will work when used in slightly acid solutions, but their best germicidal activity is exhibited in slightly alkaline conditions.

The Armour Chemical Division is offering a booklet containing data on physical and germicidal properties, average composition, compatabilities and the wide range of Arquad applications. Write for your free copy.

Mail this Coupon

Please send additional information on

- .....
- .....

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1355 W. 31st St., Chicago 9, Ill.

The dependable source of superior amine condensate!

ULTRAPOLE S
(FORMERLY ULTRAPONE S)

Ultrapole S is a 97%-100% active amine condensate with excellent wetting and foaming properties. It is compatible with soap and synthetic detergents, and has good detergent properties on cotton, wool and rayon. The pH of a 1% solution is 9.2 at 25° C. Solutions of Ultrapole S have considerable body, and reach a maximum viscosity at 8%-10%.

ULTRAPOLE G
(COMPATIBLE WITH ALKALIES)

Ultrapole G is a variant of Ultrapole S, which has been designed so that alkali, such as soda ash and phosphates, can be incorporated in solutions. These additives materially increase the detergency of any condensate.

Possibly Ultrapole G or S can help solve your detergent problems. Write or phone for specifications and quotations.

headquarters for the following

OUTSTANDING ALKYL ARYL SULFONATES

SULFRAMIN* AB-40 FLAKES
SULFRAMIN* AB-40 POWDER
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SULFRAMIN* SPRAY BEADS
SULFRAMIN* AB CONCENTRATE FLAKES
SULFRAMIN* AB CONCENTRATE POWDER
SULFRAMIN* KE LIQUID
SULFRAMIN* AB SLURRY

*TRADEMARK REG. U.S. PAT. OFF.

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ULTRA Chemical WORKS

Choice Fragrances

. . . FROM A CHEMIST'S "GARDEN"

Chemical Research works many miracles in simulating Nature. From Verona's laboratories, for example, come pure, stable and lasting aromatic chemicals that realistically reproduce the appealing fragrances of garden flowers in bloom. Verona perfume and cosmetic specialties are as *carefully cultivated* as the choicest flowers to add fresh notes of distinction to *your* products.

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AROMATICS VERONA DIVISION

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PERFECT FOR PERFUMING...

- LAUNDRY SOAPS
- WASHING POWDERS
- LIQUID CLEANSERS
- POLISHES, ETC.

NOW, MORE THAN EVER, JAVONELLA OFFERS THESE IMPORTANT ADVANTAGES!

- It's a manufactured article . . . free from the price fluctuations of natural essential oils such as Citronella, Sassafras, etc.
- Its high quality never varies, enabling you to manufacture uniformly dependable products.
- Always lower in cost than the natural oils, particularly now with citronella prices on the rise, its use results in production economies and higher profits without lowering quality standards.

WRITE FOR SAMPLE AND QUOTATION

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NINOL

Wetting Agents, Detergents, Emulsifying Agents, Fine Chemicals

For the latest in soapthetic

SCRUB SOAPS

ADD NINOL 1281

A Nonionic Detergent specially designed for use with Soaps

Now, at last, it becomes possible to give soaps all the desirable features of synthetics . . . and at a decrease in cost!

NINOL 1281

Imparts a tremendous improvement in rinsibility.
Disperses lime soap curds, prevents adhesion of loosened dirt.
Eliminates dull film, prevents tell-tale streaks on floors and walls.

Ninol 1281 possesses three unique features that make it the perfect synthetic for use with liquid soaps:—

1. Unlike most synthetics, Ninol 1281 does not decrease soap foam. In fact, it *increases* the foam of soap at all concentrations.

2. Unlike most synthetics, Ninol 1281 imparts high viscosity even at low concentrations, and can therefore thicken even dilute soap solutions.

3. Unlike most synthetics, Ninol 1281 does not rust, even in dilute solution, and can therefore be shipped in unlined steel drums.

For more information on how you can formulate non-filming soaps and decrease costs, write Dept. S.

Also

NINOL 2012A — FOR THICKENING DILUTE SOLUTIONS OF OTHER SYNTHETIC DETERGENTS

NINOL 128 — FOR MIXING WITH QUATERNARIES TO MAKE CLEANER-SANITIZERS

NINOL 800 — FOR WATER-IN-OIL EMULSIONS

NINOL 1283 — FOR INHIBITING RUSTING OF OTHER SYNTHETIC DETERGENT SOLUTIONS

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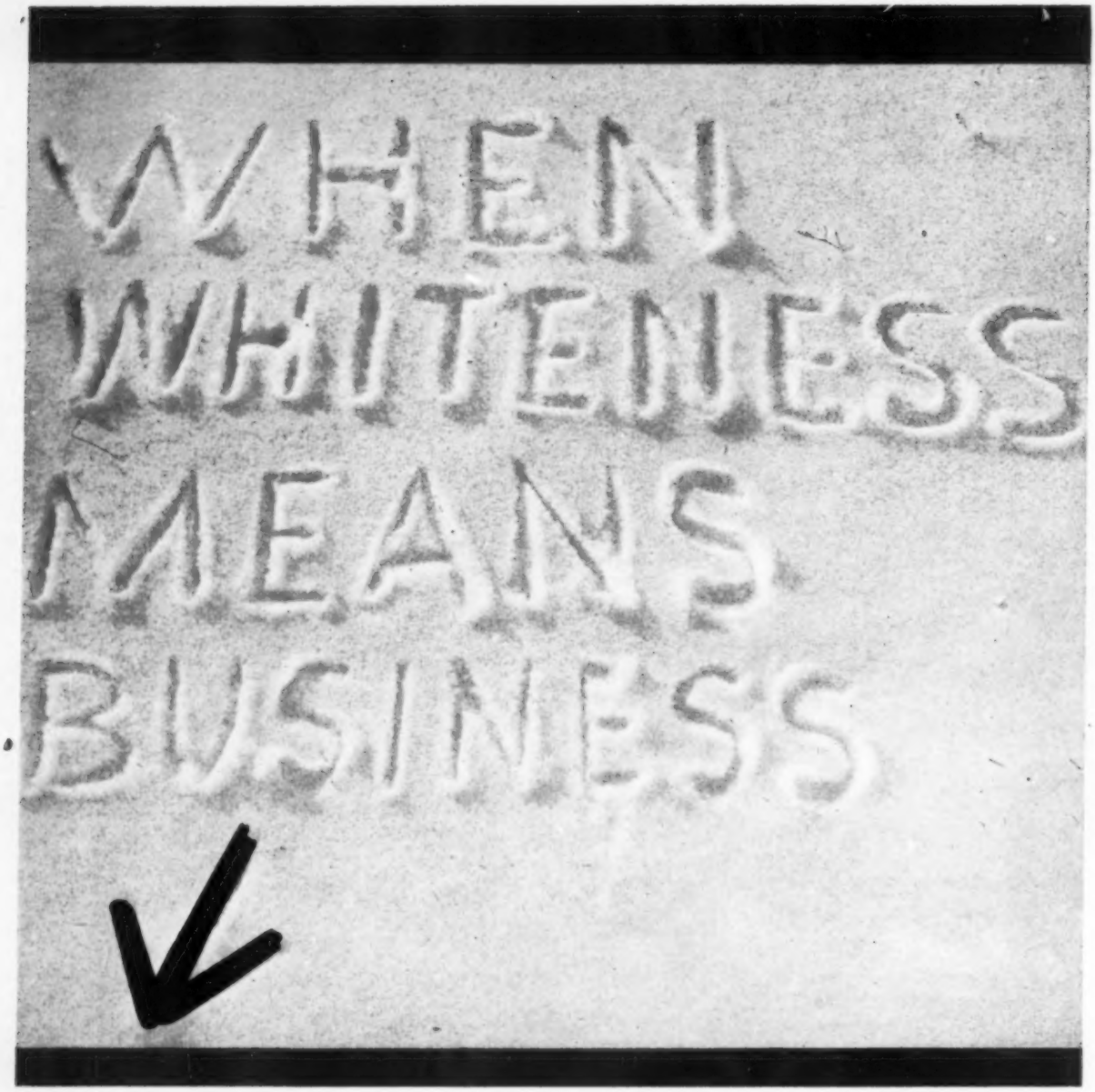

SOAP If sales are swayed by the eye appeal of your white soaps, Coumarin Monsanto can help your business. Employed as a fixative for perfume oils, Coumarin Monsanto does not discolor white soaps when used with the accepted antioxidants. White soaps stay white—even when exposed for long periods of time.

Coumarin—created in Monsanto laboratories—captures the active ingredients of tonca bean and deertongue which, up to 1915, were the accepted natural sources of coumarin. Since it is manufactured under strict chemical control, Coumarin Monsanto is a superior, uniform product of unexcelled purity. Comes in crystals of superlative whiteness and true aroma—has excellent solubility—is easy and dependable to use.

For literature giving helpful solubility tables, contact the nearest Monsanto Sales Office or write MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1700 South Second Street, St. Louis 4, Missouri.

DISTRICT SALES OFFICES: Birmingham, Boston, Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Houston, Los Angeles, New York, Philadelphia, Portland, Ore., San Francisco, Seattle. In Canada, Monsanto (Canada) Ltd., Montreal.

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Coumarin Monsanto

Ethavan (Monsanto's ethyl vanillin)

Methyl Salicylate, U.S.P.
(Monsanto's synthetic oil of wintergreen)

Vanillin Monsanto

Ethavan: Reg. U. S. Pat. Off.

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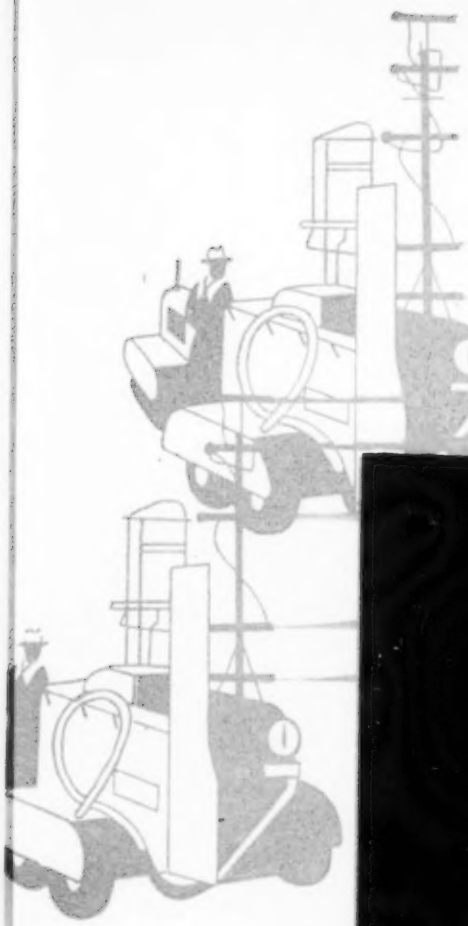

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In sprays, it's coverage that counts!

As little as ¼% to 1% NACCONOL added to wettable DDT, BHC, 2, 4-D, Sulfur, etc. vastly improves the emulsifying, spreading and sticking properties of these products and mixtures.

NACCONOL is the efficient and economical wetting agent to use because of: (1) Low cost, (2) balanced properties, (3) rapid solubility in cold water at any pH, and (4) convenient flake, powder or bead form.

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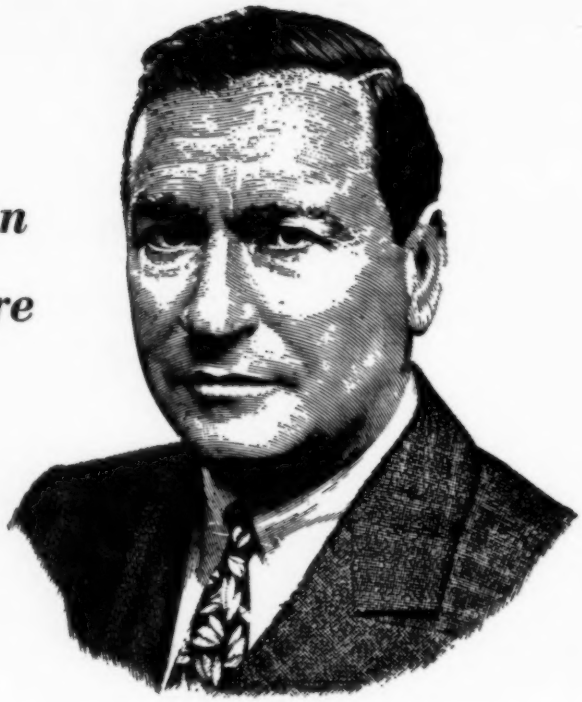

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Mr. Fairless is not expressing a personal opinion, nor is he speaking for other far-seeing executives when he tells you that our economy is built on the savings of the people and a man builds for his own and his country's future when he saves.

Actually, Mr. Fairless is merely putting in words the thoughts and action of the millions of employed men and women who *now hold* more than 50 billion dollars in U.S. Savings Bonds.

$50,000,000,000! Who *sold* all those bonds to millions of people? The answer is, nobody sold them.

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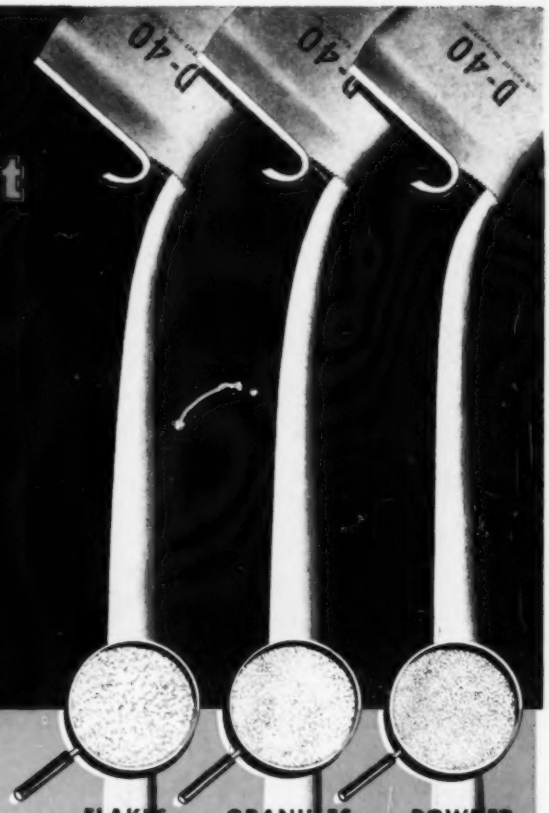

New, whiter D-40 Detergent is now available in 3 forms—flakes, granules and powder. All are of the same high quality but differ in particle size and bulk density to suit any requirement.

The new D-40 possesses the same inherently superior characteristics as before. It is neutral, yet gives unexcelled detergency. It is a superior emulsifier of fats and greases, is excellent as a reducer of surface or interfacial tension even in low concentrations and is effective in strong acid or alkali solutions.

From any standpoint, D-40 is the ideal detergent for compounders and repackagers of all types of washing or cleaning products, whether for industrial or household use.

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Methocel (Dow Methylcellulose) has many uses for the soap and sanitary product manufacturer. An unusually fine film former, Methocel can be used to dispense soap in sheet form, such as soap papers and free films containing soap.

As a thickener, Methocel adds "body" to liquid soaps and shampoos. It is an excellent suds builder and thickener for synthetic detergents. In the production of many different polishes, Methocel is useful as both a binder and emulsion stabilizer. In any use, Methocel offers the advantage of being bland, physiologically inert, clean, stable in viscosity and uniform in its thickening properties.

Methocel, in the *powdered* form, is easier to handle in process and can be dry-mixed with other ingredients or added as a water solution. This chemical of ever-growing usefulness is easy and economical to use. If you have not yet tried it, write Dept. ME-131 for your free, experimental sample.

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ONLY EMERY GIVES YOU...

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HIGHEST OXIDATION STABILITY

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SUPERIOR COLOR AND HEAT STABILITY

LOWEST IODINE VALUE

GREATER PURITY

LOWEST PEROXIDE VALUE

Emersol 132 will improve your products *without increasing your costs!*

Here is an exceptionally pure crystalline stearic acid (1.0 maximum iodine value) whose quality and value exceed all triple-pressed grades in every respect . . . yet sells at triple-pressed prices!

The exclusive, outstanding characteristics of Emersol 132 reflect in higher end-product quality . . . higher purity, lighter color, greater resistance to rancidity, and increased oxidation stability . . . all at no extra cost.

Buy this premium stearic acid today . . . see how it will make your products better, stay better longer.

NEW... "EXTRA-FINE" POWDER

In addition to the standard cake and flake form, Emersol 132, like all Emery Stearic and Palmitic Acids, is now available in a new "Extra-Fine" Powder, the smallest particle size available.

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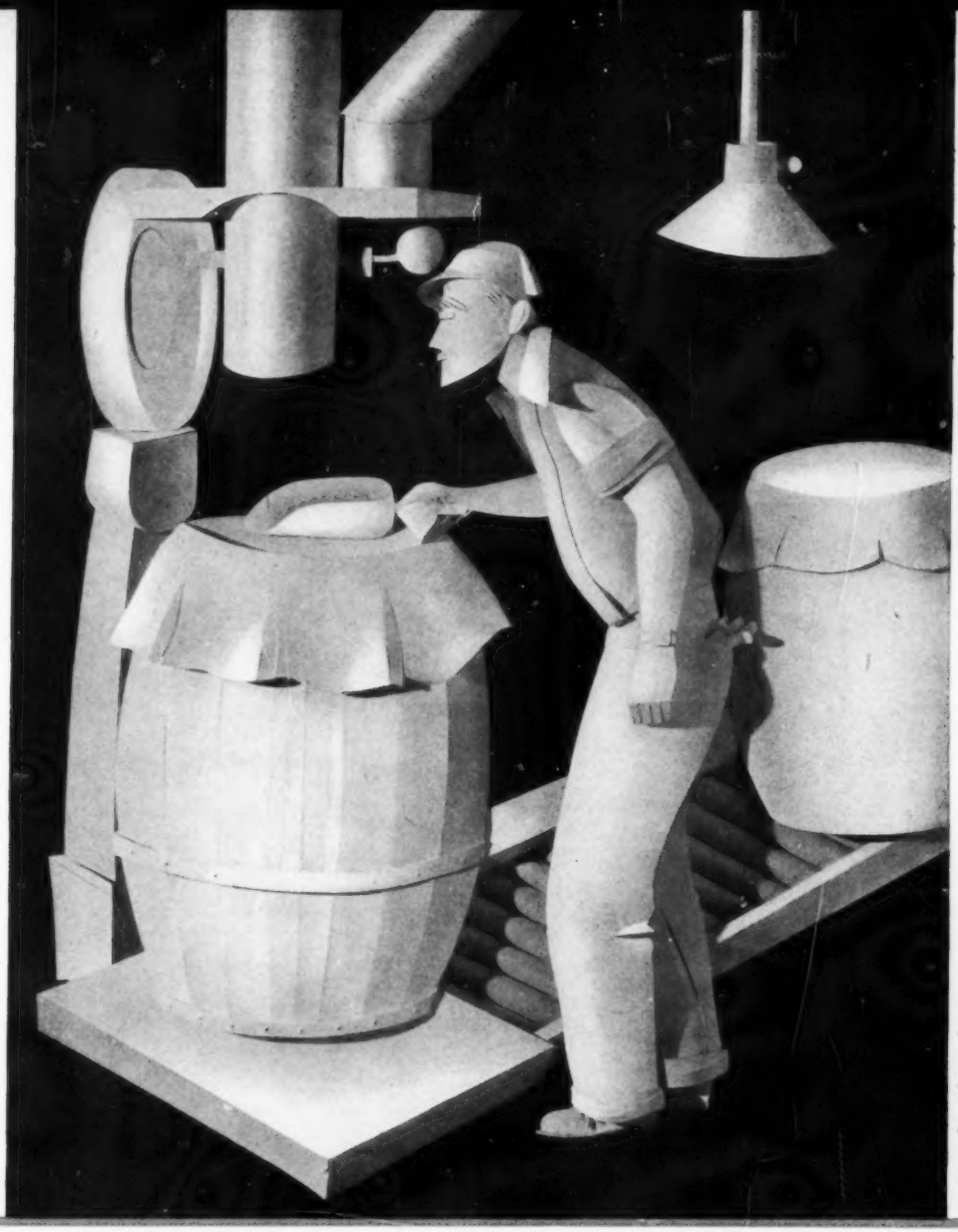

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CHEMICAL USERS' GUIDE To General Chemical Products for the Soap Industry

PRODUCT	AVAILABLE FORMS	COMMERCIAL STRENGTHS	SHIPPING CONTAINERS	APPLICATIONS
Sulfuric Acid H_2SO_4	Liquid	66° Be—93.19% H_2SO_4 99% H_2SO_4	Carboys Steel Drums Tank Trucks Tank Transports Tank Cars	Manufacture synthetic detergents; glycerine recovery; refining oils.
Oleum $H_2SO_4 + SO_3$	Liquid	Various 10%—70% free SO_3	Steel Drums Tank Trucks Tank Cars	Manufacture synthetic detergents.
Sulfan* SO_3	Stabilized Liquid	More than 99% SO_3	Steel Drums Tank Cars	Manufacture synthetic detergents.
Hydrochloric Acid HCl + Water *(Muriatic Acid)*	Liquid	18° Be (27.92%) 20° Be (31.45%) 22° Be (35.21%)	Carboys Tank Trucks Tank Cars	Glycerine recovery.
Disodium Phosphate, Anhyd. Na_2HPO_4	Powder Flake		Multiwall Paper Bags	Builder in soap and synthetic detergents.
Trisodium Phosphate $Na_3PO_4 \cdot 12H_2O$ *(TSP)*	Crystal	18.4—19.0% P_2O_5	Multiwall Paper Bags Fibre Drums Bulk Carloads	Soap builder; alkaline detergents.
Tetrasodium Pyrophosphate, Anhyd. $Na_4P_2O_7$ *(TSPP) (Pyro)*	White Powder	98% $Na_4P_2O_7$ (Equiv. 52.5% P_2O_5)	Multiwall Paper Bags	Builder in soap and synthetic detergents.
Sodium Tripolyphosphate $(Na_5P_3O_{10})$	White Powder	92% $Na_5P_3O_{10}$ (Equiv. 56—57% P_2O_5)	Multiwall Paper Bags	Builder in soap and synthetic detergents.
Sodium Silicate $Na_2O \cdot X(SiO_2)$ + Water	Liquid	38° to 52° Be Various ratios of Na_2O to SiO_2	Steel Drums Tank Trucks Tank Cars	Soap builder and filler; in synthetic detergents.
Sodium Metasilicate $Na_2SiO_3 \cdot 5H_2O$ approx.	Granules Powder		Multiwall Paper Bags Fibre Drums	Soap builder; alkaline detergents.
Salt Cake Na_2SO_4 *(Sodium Sulfate)*	Granules Powder		Multiwall Paper Bags Bulk Carloads	Extender in synthetic detergents.
Glauber's Salt, Anhyd. Na_2SO_4 *(Sodium Sulfate)*	White Granules	99.5% Na_2SO_4	Multiwall Paper Bags Bulk Carloads	Extender in synthetic detergents.
Aluminum Sulfate $Al_2(SO_4)_3 \cdot 14H_2O$ approx. *(Alum)*	Commercial • Iron Free Lump, Granular, Powder	17.25% Al_2O_3	Multiwall Paper Bags Bulk Carloads	Glycerine purification.
Aluminum Chloride, Solution $AlCl_3$ + Water	Liquid	50.3% $AlCl_3 \cdot 6H_2O$	Carboys Tank Cars	Glycerine purification.

The products advertised are commercial chemicals having various uses, some of which may be covered by patents, and the user must accept full responsibility for compliance therewith.
*Reg. U. S. Pat. Off.

BASIC CHEMICALS

FOR AMERICAN INDUSTRY

OTHER PRODUCTS: Sodium Thiosulfate; Sodium Sulfite; Sodium Bisulfite, Anhyd.
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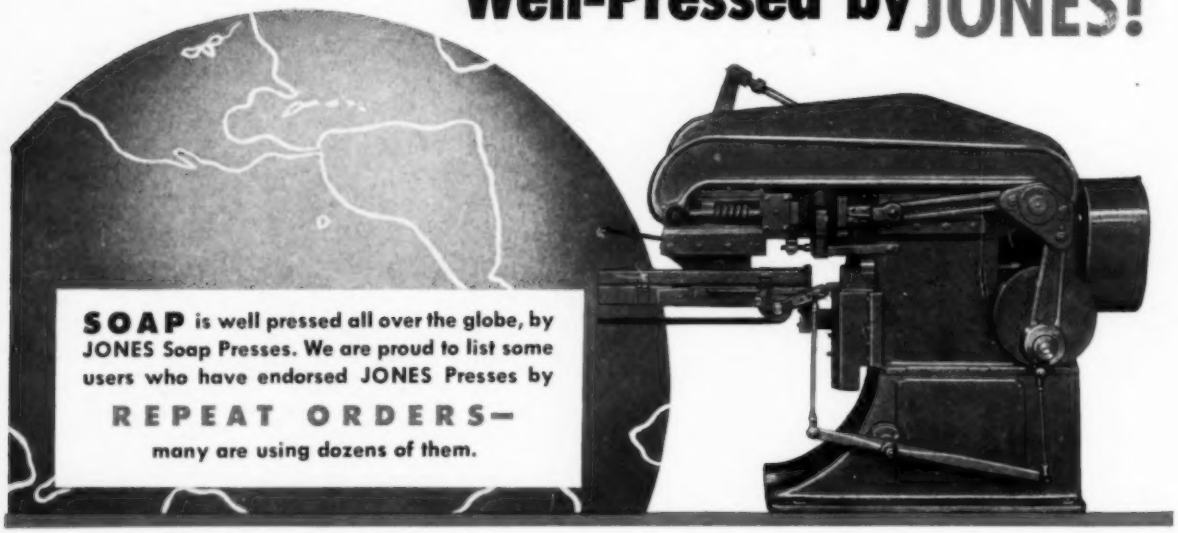
Well-Pressed by JONES!



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Cartoning Machines — Soap Presses

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AS THE EDITOR SEES IT

TAKING a leaf from the book of these Washington prognosticators who tell us every month in confidential mimeographed letters what is to come in the world of business, finance and politics—and are wrong about half of the time—we predict that the average soaper is going to be annoyed to death by shortages during 1951. After that profound conclusion, we might be more specific and say that chemicals and containers will be tough to buy, just like they have been for the past six months. Supplies of tallow, grease, and soap oils probably will be ample, although prices will continue high or go higher. Lucky is the soaper who bought that new crutcher or mill or kettle back in 1949 or early 1950, because metal scarcities will make deliveries on new equipment very slow indeed this year.

As for soap production, we look to see it move pretty close to capacity during 1951. And this in spite of the increases in synthetic detergent output which has gone ahead by leaps and bounds, and is likely to expand at an even higher rate later this year. We look for higher soap prices to come this year. What else could we expect from the present fat market? And we believe that detergent prices will keep pace toward higher levels to as great an extent as competition will permit. And thus having stuck our neck away out, we will sit back and find out how wrong we are come next December.

AS THE new year begins, American business has its fingers crossed. Its confidence in Washington is such that it hopes for the best, but is ready and expectant of the worst. That new taxes and further controls will come, business seems to have little doubt. But what it fears most are the complications which recent history tells us will be injected by politics and inexperienced administration. Very obviously, the country is tired of war in any form, which goes also for business and industry generally. That a full-scale conflict may be avoided, we feel, is the sincere hope of the people of the country irrespective of talk in Washington. After two large-scale wars, we see the world's economic problems not solved, but multiplied ten fold.

But whether another world war comes in 1951 or does not, the rearmament program will go forward. So why not let both war preparation and civilian economy benefit by the lessons of 1941-45? In short, don't let a gang of government economic theorists try to run the country! Don't let controls run wild on the bases and stifle production! Tell industry what we want done and let them do it! Don't let's have any more of these nice young fellows two months away from a Ph.D. in economics telling the president of General Motors how to make automobiles and trucks! We went through that once. Why again?

So let us all hope if we must have more controls that they will be held to the absolute minimum and that they will be enforced and administered by men from industry who really know what it is all about.

JUST a year ago, in a suit for damages allegedly arising from the use of a shampoo, a woman was awarded $27,500 by a midwest court. The decision was appealed and recently reversed by a U. S. appeals court at St. Louis. Not only was the verdict reversed, but the higher court ordered dismissal of the action. The defendant in the case was the J. R. Watkins Company of Winona, Minn. The original case was tried before a jury.

This original verdict, the trial by jury, a large company as defendant, a plaintiff of apparent reduced means,—and the eventual reversal on appeal,—all run true to a pattern, a very significant pattern which in effect makes a travesty of

justice. In short, that it might protect itself against an unjustified law suit and vindicate the reputation of its product, the defendant company has had to stand the cost of high-priced experts and the legal expenses of a year in the courts. Fortunately, the company had the means to do this. Had it been a smaller company, the final result might have been less fortunate. However, strange as it may seem, these suits seldom are filed against small firms of limited means. The big company is a more certain touch, especially in a jury trial.

Now that the case has been thrown out by an appeals court, the defendant is left to lick his wounds in private with scant attention from the daily press which heralded the original action and judgment with large headlines. The damage which has been done to the defendant by the verdict of the jury is conveniently forgotten. And even though this reversal may bring a reduced incidence of such product liability claims, the fact remains that the basic system of trying such cases is unsound. As we have pointed out before, jury trial of such cases involving highly technical medical and chemical testimony actually invites a miscarriage of justice. Until the laws of the land are changed, keeping product liability trials away from juries, future invitations to shady lawyers and thieving clients will continue to stand.

HARRIED no less today by scarcities than the average purchasing agent is the perfumer with a low ceiling on his costs. Where his job is to perfume a pound of toilet soap, or a gallon of shampoo, or insecticide, or deodorant spray, or what not at a certain cost set a while back, his task is a tough one. With natural perfume oils still rising and aromatic chemicals scarce and also moving upward, the perfumer stands between the devil and the deep blue sea. He can revamp and manipulate formulas to his heart's content, but unless he is willing to sacrifice quality completely, some revamping of fixed ideas on costs also is in the immediate offing.

IF EVERYBODY had enough new steel drums to go around, the need to return used drums to original shippers for credit would not be with us. But, new metal drums are scarce, not to mention also tin cans, bags, shipping boxes, cartons and the like,—so shippers must get their drums back to be used again as long they last. And therein lies the cause for one of our biggest headaches right now in the field of soaps, cleansers, chemicals, solvents, *et al.* A multiplicity of rules and regulations covering returned drums, varying widely from one shipper to another, has brought a welter of confusion among buyers.

No two suppliers seem to have the same idea as to how much a returned drum is worth to them, under what conditions will they accept return, or how, when and where the return should be made. Some suppliers have issued rules which are relatively lenient and easy to meet. Others have placed excessively high values on drums which they charge against the customer when shipped and their rules of return are stiff and difficult to meet. A figure as high as ten dollars each on one-time shippers is being added to invoices in some cases with returns for credit limited to as short a period as thirty days. This ranges down to five dollars with ninety days time limit, or in some instances no time limit at all.

That some sort of standard practice is needed to bring order out of chaos seems apparent. Package sizes and specifications have been fairly well standardized. Why not rules and regulations covering drum use and return in an emergency such as we face today? We well understand that the price at which a drum is charged must be left to the individual shipper, but this does not preclude some sort of standard regulations covering other factors in a return drum transaction. That many buyers are hot under the collar over what they consider pretty rough and high-handed treatment in the matter of returnable drums is no secret. Some shippers are inadvertently building a lot of ill-will for themselves which eventually must come home to roost on their doorsteps. But if everybody adhered to the same set of equitable rules, there could be no complaint. As we see it, the drum scarcity may last for a long time and it would be a good idea for one of the trade associations to make an attempt to take the bull by the horns right now.

A far cry from the soap and candle industry plants at the turn of the century is the new soap, detergent and shortening plant of Lever Brothers Co. being erected at Los Angeles. Continuous process soap making and spraying drying equipment (upper right) are features of this new, multi-million dollar plant.

Soap Progress Since 1900

By John W. McCutcheon

THE technological changes made in the soap industry in the past 50 years have been significant and far-reaching. How great these advances have been may be judged better by comparing the industry and its products of today with soaps and soap making in 1900. In the first place, the soap industry, one of the oldest in America and fundamental to all civilized ways of life, was a very definite factor in our economy at the turn of the century. Although all the larger soap companies of today can trace their roots back many years before 1900, soap making at the turn of the century was practised largely by many small companies scattered far and wide. Candle making was still so important that the characterization "Soap and Candle Industry" was common.

Census production statistics were not as well developed as they are today. We do know, however, that in 1904 436 companies employed 11,044 wage earners. Reliable oil consumption figures were not available until some time later. By 1917 the oil and fat consumption figure for soap making was put at 1,268,166 pounds. Very probably nine million pounds of oils and fats was the annual consumption rate in 1900.

During the intervening years, the number of companies engaged in soap making has declined steadily to 249 employing 27,660 wage earners, as reported in the Commerce Department's 1947 census. Thus, at present about half as many companies are making three times as much soap as in 1900 with a slightly greater economy of labor. These old figures may be misleading to the uninitiated, however, since the period 1900-50 represents the amalgamation and growth of a comparatively small number of companies to sizeable proportions. This trend is worldwide.

That labor efficiency increased only moderately is not indicative of slow progress by any means. Rather it indicates that any slack produced by more efficient operation has been taken up by expanded research and control. The soap industry as a whole has never required a high ratio of labor to

product, so that there never has been a real incentive to cut costs in this respect. Of course, in any industry, and soap in particular, one will always find isolated examples of progress stagnating, with methods used twenty years ago still prevailing. But this is exceptional.

As with methods, products also have changed over the years. Examples (Table I) from census reports are illustrative of changes.

The following are worthy of note: (1) The steady growth of toilet soap; (2) the rapid growth of granulated soap at the expense of bar soaps; (3) the comparative falling off of chip soap usage if increase in population is taken into account. Bar soaps of course were a factor in production many years prior to 1900 but were not reported separately until 1923. Granulated soap was a newcomer and appeared for the first time in 1925. In 1947, synthetic detergents appear for the first time, although they may properly be considered as being a factor in the market after 1939.

TABLE I
(millions of pounds)

	Toilet Soap	*Granulated Soap*	*Laundry Bars*	*Soap Chips*
1914	170	...	....	98
1919	179	...	....	182
1921	197	...	....	144
1923	240	...	1516	219
1925	272	142	1431	325
1927	287	215	1487	373
1929	324	337	1466	388
1931	305	422	1431	351
1933	315	370	1258	399
1935	352	503	1134	459
1937	360	743	1122	390
1939	409	893	1240	419
1941 1943 1945	No census data			
1947	550	1522	764	427

Developments Outlined

GENERALLY speaking, technical progress may be considered under the headings: (1) Developments caused by invention; (2) developments in equipment design, in methods and controls which are observable only in retrospect; (3) developments of a chemical nature which stem from outside the soap industry itself, such as the introduction of the polyphosphates by the heavy chemical industry. Of these three, the most important from the writer's viewpoint is the second. It is this one which is the least talked about which is most closely associated with the entire chemical field and without which progress would be at a standstill. Such progress is represented by the use of stainless steel for sulfonations, by pH recorders for lye treatment and by activated carbon for bleaching. The chemical industry is built on the interchange of ideas and the soap industry is no exception to this.

The selection of important milestones of progress under type one, invention, is a matter of opinion. Chronologically, the writer considers them as follows:

	Approximate date of use
(1) Hydrogenation	1910
(2) Spray drying	1925
(3) Synthetic Detergents	1930
(4) Continuous Soap Processes	1940

The process of hydrogenation was invented just prior to 1900 but did not become much of a factor in oil processing in America until after 1910. The 1917 Bureau of the Census report on oils and fats mentions the "new process of hydrogenation" for converting fish oils into suitable material for the soap kettle. There is no question that the process had a profound effect on raw material available for soap making up until 1940.

The reduced supply of marine oils during and since World War II, plus the subsequent new methods of processing these unsaturated oils to products useful for the paint and varnish industry, has reduced somewhat their economic value. It still remains a powerful control tool for producing quality products, however.

Spray drying of soaps is more than an economic procedure for removing water. It provided a means of putting soap in a free flowing easily soluble form comparatively free of dust. In the fall of 1925, *Soap and Sanitary Chemicals* reviewed an article by Kemp which disclosed five or more ways of making suitable soap powders by grinding. This was probably the most authoritative statement on the subject at the time and I am sure the author was not aware that a new method was in the development stage which would make practically everything he said obsolete within a few years. It is the writer's opinion that the rapid growth of granulated soap powders and later synthetics as shown in the Census data, may be largely attributed to spray drying. The development was American and came from within the soap industry itself. The first spray nozzles for example, were made in the machine shops of soap companies. Of course, contemporary engineering technique contributed its share as well, with such devices as high pressure pumps for handling the viscous soap solutions.

Synthetic Detergents

SYNTHETIC detergents are considered by some as the greatest single advance made in the last half century of progress. The writer will not deny this claim. The synthetics trace their origin to the German dye industry in 1916. They were further developed by the Germans to the birth of the "Igepons" about 1925 and were finally imported in the form of the alcohol sulfate "Gardinol" into America in the early thirties. The dye industry and not the soap industry was initially responsible for the development of synthetic detergents, so that we have to date the initial entry of the soap industry into the field around 1931 or 1932, with the advent of "Dreft" on the retail market.

If a single invention had to be

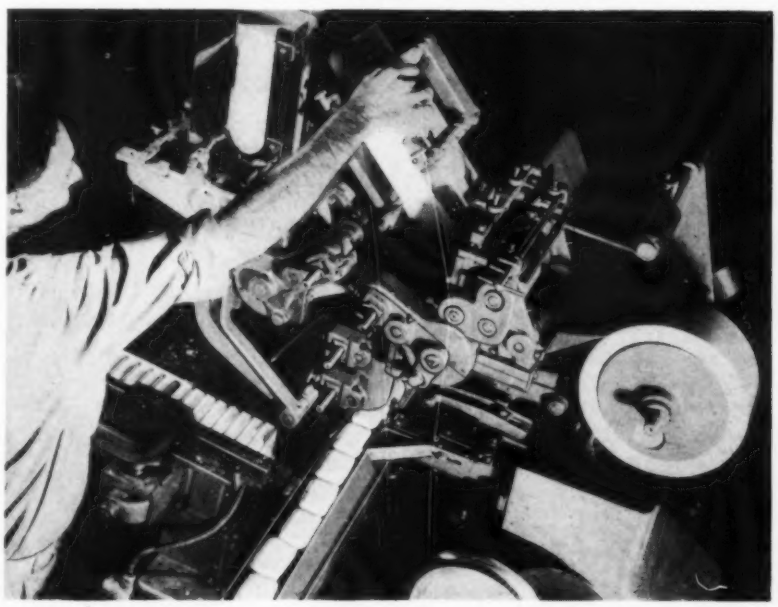
pointed out as being responsible for the development of synthetics, it would be the hydrogenation procedure of an oil to an alcohol with copper-chromium catalysts. The rapid development of products and processes, particularly in the post war period of 1946 to the present, has been amply covered in special publications on the subject. It should be noted, however, that the soap industry initially and still is the largest supplier of detergents for the retail market, while the basic organic chemical industry dominates the industrial field as the source of synthetics. Recently, the latter group has considered itself part of the detergent chemical industry, while the soap industry finds itself under the heading of detergent industry. Perhaps the importance of this development is better understood if we say that from 1900 through 1940 practically all detergents were soap, but by 1950 out of every four pounds of detergent sold three pounds are soap and one pound is a synthetic.

Continuous Process

CONTINUOUS soap processes are almost lost sight of in the momentous happenings above. However, from a purely technical development within the industry, the introduction of the continuous processes to soap making probably ranks first. The Clayton process has long been known and used on a small scale. However, to date it has not received great consideration in America. The Bradshaw method of alcoholysis, likewise is best adapted to the production of specialty soaps. It is not, as far as is known, being used at the present time. On the other hand, a high pressure hydrolysis continuous neutralization process developed by Emery, Procter and Gamble and Colgate-Palmolive-Peet has had a good many years of successful application to its credit. The first all-continuous plant under this process was that of Procter and Gamble Co. at Quincy, Mass. about 1937. Since then many similar installations have been put into operation by both Procter and Gamble and Colgate-Palmolive-Peet.

The next development was a continuous saponification process usi· centrifuges, jointly developed by Lever Bros. Co. and Sharples, Inc. A plant was put into operation at the Baltimore factory of Lever Bros. about 1945. Since then numerous other plants have been erected, by Lever Bros. in America and by Sharples, Inc. outside the U. S. A. It is still too early to evaluate clearly the impact these developments will have on the soap industry. It is possible that 20 percent of American soap manufacture is being made at present by a continuous process. As one soapmaker put it "It does not pay us to scrap our kettles to install a continuous system but on any expansion or replacement basis, only such a method will be considered."

High speed wrapping machines such at that below have increased soap output and cut distribution costs.



Technical Developments

DEVELOPMENTS of a technical nature include those pertaining to fatty raw materials, control methods, processing methods, equipment design, instrumentation, and technical information and research. These developments are of the run of the mill variety which are best appreciated by measuring against previous ideas and methods of operation. For the most part, they represent general contemporary advances in many fields. For this reason, only representative examples will be given.

Fatty Raw Materials. At the turn of the century, the chemistry of the fats was understood only imperfectly. For example, many soap boilers still held the opinion that dropping a nigre removed something good from the soap. The method of oil analysis by fractional distillation was not developed until Jamieson's classical experiments in the early twenties. Although the variety and types of raw materials remain somewhat the same today as in 1900, the proportions used differ, due chiefly to the reduced production of bar form soaps and increased output of toilet and granulated powdered soap products.

Control Methods. Soap boiling has evolved from the realm of an art to an exact science due to the studies of phase rule, methods of analysis and kettle measuring devices. The trowel and tongue test may still be applied by the soap boiler but only as a check against free alkali, glycerine, salt and titer analyses. Materials are measured or scaled. Thirty years ago a soap boiler could not operate without salt. Now many establishments use only brine, eliminating all hand labor. In modern factories where salt may still be used on occasions it is handled entirely by electric hoist trucks.

Analyses play an important part in plant control and even these

methods are regularly reviewed and amended. It is not to be inferred that methods of analysis were not available in 1900, but rather, that the equipment, directions for carrying out the test and the reagents available gave results which by today's standards would be considered totally inadequate. The general advance in analytical technique and its application improved the uniformity and quality of soap products. To illustrate this point, rosin used to be incorporated regularly in toilet soap to stabilize it against rancidity. Sodium silicate was used for the same purpose. Today, neither of these materials are necessary due entirely to process control.

A prime example of the advance in processing methods in addition to hydrogenation, high pressure splitting, etc., is the "Solexol" process developed by H. W. Kellogg Co. for upgrading tallow; the solvent crystallization process of Emery Industries for the preparation of oleic acid and stearic acid; the mechanical heat exchanger by Girdler, Inc. (votator) for the solidification and aeration of soaps; or the ion exchange process of Illinois Water Treatment Co. for the preparation of chemically pure glycerine without distillation.

Equipment Design

UNDER equipment design come such developments as the water cooled press for bar soaps, the water cooled steel mill for bar and flake manufacture, the flash evaporator and the continuous glycerine still. The direct fired copper pot still has given way to stainless steel, high vacuum stills requiring no steam assistance and operating continuously. Fractionation columns permit separation of the fatty acids into groups which although not perfect, still permit commercial production from select solvent crystallized materials of such products as 90% lauric acid, 90% palmitic acid, 90% oleic acid, etc. The lowly crutcher, the plodder, the granite mill and the cake drier still remain about the same in general design. But the cutting, stamping and wrapping and packing machines have a long history of metamorphosis. A 1900 press for example is described as a great improvement which by the addition of a hand wheel, enables two boys to turn out 1400 cakes an hour. An automatic press was noted by the writer not long ago, which could turn out a thousand times that many. Fifteen years ago, automatic pin die presses came into use, an advance which only those familiar with the business of pressing bar soaps can appreciate.

The transfer of materials in the modern soap factory has made almost unbelievable advances. The pneumatic lift and the electric hoist truck are a common sight in soap plants.

Continuous filters for all types of separations such as salt from crude glycerine, soap from lye, etc., find wide applications in soap plants. These items barely scratch the surface of the equipment changes that have taken place, most of them in the last twenty-five years.

Soap Plant Instrumentation

THE application of instrumentation to the soap industry has probably been slower than in many allied industries, because of the low labor cost per dollar of product and partly as a result of the simple nature of many of the prime operations. However, just a few examples will show some of the developments and applications in the soap industry—pH recording apparatus on lye treat tanks, McLeod vacuum gauges for fatty acid stills registering in tenths of a millimeter, recording electric thermometers and pyrometers, electronically operated, proportioning valves for continuous operation, flow meters for measuring and control in sulfonations or in crutching, electric relays for operating packaging and sealing equipment automatically, tankometers for the remote measurement of tanks, etc.

To conclude this section, tribute must be paid to the modern advance in the availability and use of technical information enabling individuals to keep abreast of developments in their own and other fields. *Soap & Sanitary Chemicals*, started twenty-five years ago is an example of how ideas are exchanged in print. The *Journal of the American Oil Chemists Society*, the *Fats & Oils Situation* published by the Dept. of Agriculture are just a few typical examples of many sources of technical information. *Chemical Abstracts* of the Am. Chem. Soc. first published in 1907 is an excellent time saver for the busy researcher. Fifty years ago these services were not available. Without them, the soap industry could not have kept pace with consumer demands.

Outside Chemical Changes

THE third type of advance is noted in the auxiliary chemical developments outside the industry itself. The most important of these was the development within the past fifteen years of the complex phosphates. Their contribution to granulated detergents ranks equally with that of the spray drying process. Probably neither could have existed without the other. First came the tetra sodium pyrophosphate, next and quite recently, the sodium tripolyphosphate. The long list of achievements in the silicate field must also not be overlooked, including the more recently developed potassium salts. Carboxy methyl cellulose, methyl cellulose and just recently methyl cellulose sulphate are recent additions to improved soap formulae. The many types of organic amines are a contribution of the synthetic organic chemicals industry making possible the soluble shampoo soaps and synthetics. Whitening agents have been contributed by the dye indstry. One must not overlook either, the contributions of the perfume industry which has made available many superior synthetics within the price range required for soap products. Many other items could be mentioned such as stabilizers, whiteners, etc. which were totally unheard of in 1900.

Unquestionably, the soap industry may feel proud of its record of achievement in the past fifty years. What the next fifty promises is highly speculative, to say the least. The writer hopes he may have a rain check for that report. At any rate, one may expect that the fats themselves will be considered more and more as merely raw materials for further processing. Soaps probably will be tailored to exact specifications and use. Processing

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SHAMPOO DAMAGE AWARD Reversed on Appeal

REVERSAL of a $27,500 judgment against the J. R. Watkins Co., Winona, Minn., in a suit involving alleged damages from use of a liquid soap shampoo, granted to a Minnesota housewife, was announced recently. The original award was made in late 1949 following a jury trial of the case before the U. S. District Court at Minneapolis. Appeal was taken to the U. S. Circuit Court of Appeals at St. Louis which unanimously reversed the decision of the lower court and remanded the case with instructions to dismiss the action.

In commenting on the reversal of the original judgment, N. A. Barth of the Watkins legal department stated: "As indicated in the December, 1949, issue of *Soap and Sanitary Chemicals*, the damage that has been done to the reputation of the Watkins company as a result of the verdict of the lower court, is of course conveniently forgotten. I do hope, however, that as a result of this reversal, there will be a considerable lower incidence of product liability claims."

Excerpts of the unanimous opinion of the three-judge U. S. Court of Appeals, Eighth Circuit, at St. Louis, follow:

"This was an action brought to recover damages for injuries alleged to have been sustained by her by reason of the use and application of 'Watkins Cocoanut Oil Shampoo' which was manufactured by the appellant, J. R. Watkins Company. Plaintiff, a married woman, 49 years of age, in December, 1947, procured a bottle of 'Watkins Cocoanut Oil Shampoo.' A friend who had been a beauty parlor operator and who had previously shampooed plaintiff's hair, shampooed her hair by applying part of the contents of the bottle of shampoo to plaintiff's hair. Following the completion of the shampoo plaintiff had a sensation of burning on the forehead and scalp and itching of the scalp. The scalp was red and itched for several days, following which plaintiff's hair started to come out at each combing, and by April, 1948, it was practically all gone. Later she lost her eyebrows and eyelashes. About a year later she lost all of the hair over her entire body. Prior to December, 1947, she had had a luxuriant growth of hair. It was her custom to shampoo her hair every two or three weeks, which custom she had followed for a long period of time.

"It was alleged by plaintiff that it was represented by defendant that this shampoo had been compounded from pure ingredients of superior merit and quality; that it was free from deleterious, poisonous, infectious, or harmful materials, and wholly adapted to improve the user's hair and to give vigor, luster and tone to the hair and scalp of the user, but that contrary to these representations the shampoo used by plaintiff was carelessly, negligently and improperly compounded by defendant and contained poisonous, infectious, injurious and deleterious materials and chemicals, causing it to be imminently dangerous and harmful to health. The contents of the bottle of shampoo were not all used.

"Dr. Howard, a specialist in dermatology, examined plaintiff in June, 1948, and based on his examination and the history of the case, testified that in his opinion the loss of plaintiff's hair, eyelashes and eyebrows was due to the shampoo which plaintiff used in December, 1947. Part of the contents of this bottle of shampoo was analyzed by Dr. Hervey B. Barber, a chemist at the University of Minnesota, the analysis being made for the purpose of determining the alkalinity of the contents of the bottle of shampoo. Being called as a witness for plaintiff, he testified that every soap has to have an alkaline base; that to have a usable soap there must be what is referred to as a 'pH,' of 7 or more, and that soaps in general vary from 8 to 12; that if a soap contained a pH of 10.5 he would not be afraid to use it; that the pH in the bottle of shampoo submitted by plaintiff was 10.2. There was testimony by another chemist called as a witness for plaintiff to the effect that any soap having anything below 12 or 13 pH was a perfectly safe soap or shampoo.

"At the trial Dr. Ryerson, head of the department of chemistry of the University of Minnesota, called as a witness for defendant, in open court made a test of the remainder of the shampoo contained in the bottle of shampoo produced by plaintiff as having been the shampoo used by her. This test showed a pH of 9.5, 'almost 9.6.' There was testimony that the burning, itching and irritation of the scalp described by plaintiff might have been caused by the rubbing incident to the giving of the shampoo, and that it might have been caused by 'the mechanics as well as the chemical.' Defendant called a number of other experts, among them Dr. Paul O'Leary, associated with the Mayo Clinic since 1917 and head of the department of dermatology since 1924, who had had experience with some 300 people who had alopecia; Dr. Francis E. Senear, a specialist in dermatology and head of the department of dermatology at the University of Illinois, College of Medicine; and Dr. Henry Michelson, a specialist in dermatology and director of the division of dermatology at the University of Minnesota. All of these witnesses stated their positive opinion that plaintiff's condition as described by her was not and could not have been caused by defendant's shampoo or by any chemical externally applied to the human scalp. Dr. O'Leary who had examined plaintiff said that *alopecia totalis* was a disease and that plaintiff's condition as described by her 'was the normal course of events in an individual who is developing total alopecia.'

"At the close of all the testimony defendant moved for a directed verdict which motion was denied and the case was submitted to the jury on instructions to which defendant saved certain exceptions. The jury returned a verdict in favor of the plaintiff for $27,500.00. Defendant moved for judgment notwithstanding the verdict or in the alternative for a new trial, which motion was denied and judgment entered pursuant to the verdict. De-

IMPRESSIVE EVIDENCE

BECAUSE he found a dead mouse in a bottle of Coca Cola which he claimed made him sick and caused loss of weight, an Oklahoma City fireman sued the local bottling company for $8,000 damages. To prove in court that the presence of the mouse could do no actual harm to the person who drank the beverage, even though repugnant, Dr. H. F. Marsh, professor of bacteriology at the U. of Oklahoma Medical School, demonstrated by drinking a bottle of coke, all but the mouse, in court. The suit was won by the Coca Cola bottler!

fendant sought reversal on substantially the following grounds: (1) the court erred in denying defendant's motion for a directed verdict and its motion for judgment notwithstanding the verdict; (2) the court improperly permitted Mrs. Petrus to testify that at least a year before plaintiff's injury she used a bottle of defendant's shampoo and suffered loss of hair; (3) the court erred in charging the jury that the evidence given by the expert witnesses who testified upon the trial might be disregarded.

"In considering the question of the sufficiency of the evidence we must view the evidence in a light most favorable to the plaintiff and to assume as proved all facts which the testimony reasonably tended to prove. *Duncan v. Montgomery Ward & Co.*, 8 Cir., 108 F.2d 848; *Asher v. United States*, 8 Cir., 63 F.2d 20. There must, however, be substantial evidence to warrant the submission of the issue to the jury and the trial court can not properly submit an issue to the jury on a mere scintilla of evidence. The question as to whether or not the evidence is substantial is one of law to be determined by the court. *Penna. R. Co. v. Chamberlain*, 288 U. S. 333; *Simkins Federal Practice*, 3rd Ed., Sec. 626.

"In reviewing the testimony it is necessary to consider what plaintiff was required to prove in order to entitle her to recover. We turn first to the allegations of plaintiff's complaint. She alleged that the defendant represented that its product was compounded 'from pure ingredients and as being of superior merit and quality and as being free from deleterious, poisonous, infectious, or harmful materials, and wholly adapted to improve the user's hair * * *', and she also alleged that the shampoo which she used 'contained poisonous, infectious, injurious and deleterious materials and chemicals.' In submitting this vital issue the court in its instructions among other things charged the jury that,

"'The burden rests upon the plaintiff to further establish by a fair preponderance of the evidence the following points: That she used 'Watkins Cocoanut Oil Shampoo' according to directions furnished by the defendant; that this shampoo contained deleterious or poisonous material or substances in dangerous quantities; that this latter fact was unknown to her and that as a direct and proximate result of the use of this product she suffered damages.'

"The court then specified certain elements which must be found by the jury in order to entitle the plaintiff to a verdict. Among these was the following: 'That the shampoo contained dangerous ingredients in quantities likely to produce injury.'

"In the final analysis the verdict rests upon the testimony of the plaintiff that she used the defendant's shampoo, that immediately her scalp became red, itchy and irritated, that shortly thereafter her hair began to fall out, that the hair from her scalp, her eyebrows and eyelashes disappeared, and that after about a year the hair from her entire body fell out, and the testimony of Dr. Howard.

"We have therefore referred generally to the testimony of Dr. Howard but we think it requires further analysis. He based his opinion that the shampoo caused plaintiff to lose her hair solely upon the facts that plaintiff used the shampoo and later lost her hair. This, of course, added but little to the testimony of plaintiff. Among other things he testified as follows:

"'Q. So that if Mrs. Raymond came to us and exhibited her scalp showing no hair on it and without saying anything more to you said, 'Now in your opinion what caused that?'—you would not be able to give her any answer, would you?

'A. That is right.

'Q. And by the same token if she told you that she had used a shampoo and it was established that the amount of alkali in that shampoo was one-twentieth of normal, then by the same reasoning you would conclude that that shampoo was what caused the baldness?

'A. That is right.

'Q. Or if it was even one-fiftieth?

'A. That is right.

'Q. Or one-ninetieth?

'A. That is right.

'Q. It wouldn't make any difference?

'A. That is right.

* * * * * *

'Q. Then I think that you said that if she came to you and said she used a soap which was a very weak solution that you would say that was the cause of it?

'A. You are right.

'Q. In other words, your opinion is based upon what she says she did. That is what your opinion is based on?

'A. Based on the history that she used a certain something and that something produced certain results.'

"According to this testimony the shampoo could have caused plaintiff's condition whether it contained a chemical substance capable of producing those results or not. There is nothing in this testimony to indicate that the ingredients in the shampoo could or did cause plaintiff's loss of hair. The testimony did not tend to show that the shampoo contained poisonous, infectious, injurious and deleterious materials and chemicals as alleged in the complaint and as described in the instructions of the court; in fact, it adds nothing to plaintiff's testimony that she used the shampoo and that thereafter her hair began to fall out. This testimony shows no causal connection between the use of this shampoo and the resulting falling out of plaintiff's hair. The mere suffering of this illness following the use of the shampoo did not tend to prove that the shampoo was poisonous or infectious. *Collings v. Northwestern Hospital*, Minn., 227 N.W. 910; *Moses v. St. Barnabas Hospital*, Minn. 153 N.W. 128. If the condition of plaintiff following the use of this shampoo had gone without explanation there might be some ground for a presumption that the contents of the shampoo were deleterious. There was, however, undisputed evidence as to the ingredients of this shampoo and their qualities, and there was the undisputed test of eminent specialists that the ingredients could not have caused plaintiff's condition. The evidence was without dispute that all soaps contain lye in combination with other ingredients resulting in alkalinity without which there can be no soap. Defendant's shampoo contained lye and plaintiff's case was dependent upon whether or not it contained excessive alkalinity. As has been recited, the contents of the bottle of shampoo produced by plaintiff, a portion of which was used on her head, was analyzed by experts appearing for plaintiff. The testimony of Dr. Barber, who was plaintiff's witness, was to the effect that the shampoo contained a caustic described as an alkaline content expressed in terms of pH 10.2. There is no testimony that such a shampoo was or could be harmful in its application to the human scalp. Dr. Barber himself said he would not be afraid to use such a shampoo. Another witness for plaintiff, Dr. Jilk, stated that soap having anything below pH 12 or 13 was a perfectly safe soap for shampooing. Not only this but there was undisputed testimony that *alopecia totalis* is a disease which occurs with some frequency and that such a disease would concur closely with any soaping of the hair and with the use of any ingredients or any soap or shampoo which might be applied to the scalp. Then it appeared that the hair on the rest of plaintiff's body also fell out and this was not subjected to shampoo. Presumptions can not be weighed in the balance against evidence. * * *

"In the instant case plaintiff's loss of hair was not left without explanation. At least three eminent specialists in dermatology testified positively that defendant's shampoo did not and could not cause plaintiff's condition. In a recent case entitled *DeVere v. Parten*, Minn., 23 N.W.2d 584, action was brought by an employee against her employer, alleging that while employed she was subjected to and inhaled carbon tetrachloride vapors, causing her to become afflicted with the disease known as *transverse myelitis*, which in turn produced permanent paralysis of the body from above the hips to the toes. It was admitted that there was some carbon tetrachloride vapor in defendants' machine shop where plaintiff was employed. In the course of that opinion the court among other things said:

'Plaintiff called three medical witnesses, who gave expert opinions that the *transverse myelitis* from which she was suffering was caused by the carbon tetrachloride vapors she inhaled in defendant's shop. Neither the medical experts nor the other witness who preceded them testified to the density of the concentration of the carbon tetrachloride vapors in defendants' shop: The medical experts in their testimony enumerated *trauma* and various sorts of germ infection as known causes of *transverse myelitis* and excluded all of them as the cause in plaintiff's case. One of plaintiff's medical experts, Dr. Henry W. Quist, did not testify as to what

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WILLIAM H. HARRISON

PAUL HOFFMAN

ARTHUR R. UPGREN

P. J. STOMBERG

Soap Industry Meets Jan. 31

THE emphasis will be on the effect of the international situation on the domestic economy of the U. S. and what is expected of the soap and detergent industry in the coming year at the 24th annual convention of the Association of American Soap & Glycerine Producers, being held Wednesday, Jan. 31 and Thursday Feb. 1, at the Plaza Hotel, New York.

Foremost among the speakers who will address the soap manufacturers is William H. Harrison, Administrator of the National Production Administration, Washington, D. C. Mr. Harrison's address at the group luncheon, Feb. 1, will mark one of his initial public appearances since he took leave of his post as president of International Telephone and Telegraph Corp., New York, to assume command of N.P.A. It is expected that he will outline the role planned for industry in the current emergency.

From the international standpoint, Paul Hoffman, recently appointed director of the Ford Foundation, previously Administrator of the Economic Cooperation Administration and head of Studebaker Corp., South Bend, Ind., is expected to discuss the role of E.C.A. in aiding European industrial recovery. Mr. Hoffman is to be the principal speaker at the banquet, the final night of the two-day meeting.

The fats and oils situation will be covered by Ralph S. Trigg, Administrator of the Production and Marketing Administration and president of the Commodity Credit Corp., U. S. Department of Agriculture, Washington. Mr. Trigg will speak Thursday morning, and his talk is entitled, "Fats and Oils Outlook for 1951."

The luncheon speaker on Wednesday, Jan. 31, is to be Admiral Joel T. Boone, Inspector-General, Naval Medical Activities, U. S. Navy. He retired last year as General Inspector of the U. S. Navy, Bureau of Medicine and Surgery. He is a former White House physician, having served as medical adviser to Presidents Harding, Coolidge and Hoover.

"The Business Outlook for 1951" will be discussed by Arthur R. Upgren, professor of economics at the University of Minnesota and associate editor of the *Minneapolis Star*. He is scheduled to speak at the Wednesday, Jan. 31 morning session, following Neil H. McElroy, AASGP president and head of Procter & Gamble Co., Cincinnati, who will give his address of welcome and review of the year. Following Mr. McElroy will be a discussion entitled "Market Research—Household Soap Trends", presented by P. J. Stomberg of A. C. Nielsen Co., New York.

Following the first day's group luncheon, simultaneous meetings of the Specialty Soap and Glycerine Divisions will be held. Features of the Specialty Soap Division meeting include a talk on "Sanitation" by William T. Ingram, associate professor of Public Health Engineering, New York University, and editorial director of *Modern Sanitation* magazine. A symposium on the concentration of liquid soap for use in soap dispensers, with J. L. Brenn of Huntington Laboratories, Huntington, Ind., as moderator, will be participated in by Martin Peters of Moore Brothers Co., New

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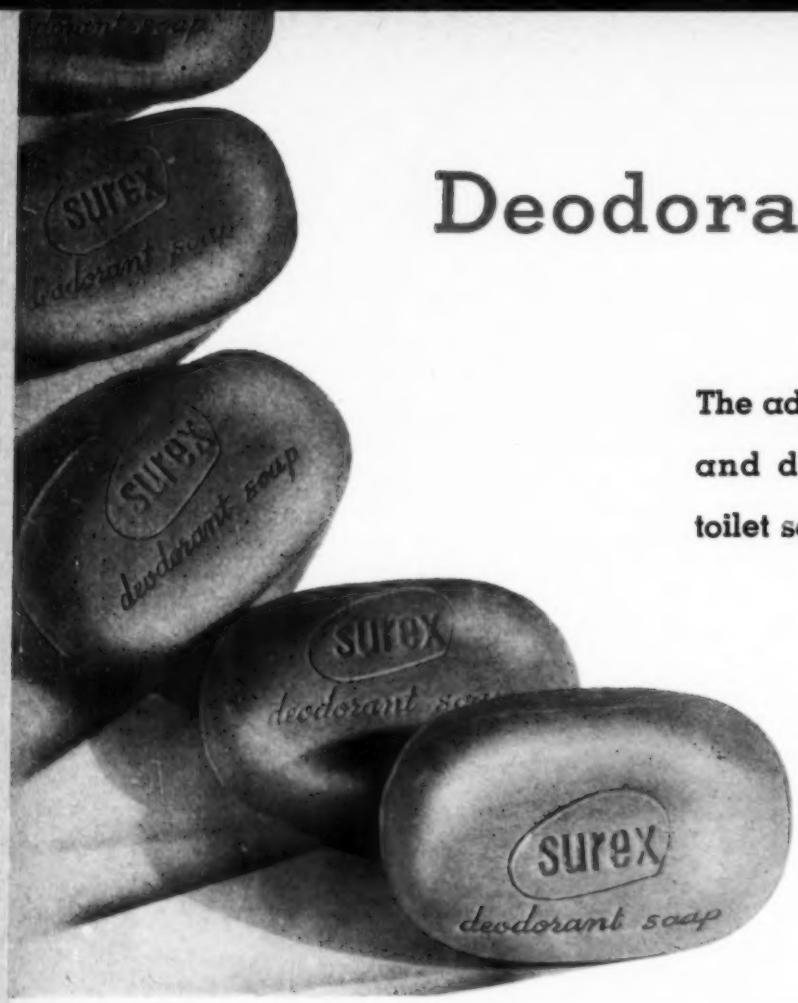
N. N. DALTON

LAWRENCE FLETT



Deodorant Soaps . . .

The advent of "G-11" or hexachlorophene and developments in the deodorant toilet soap market of the past three years

PERHAPS the most widely discussed development in the soap industry over the past year has been the new hexachlorophene deodorant toilet soaps. The favorable reception of "Dial," first put on the market by Armour & Company about three years ago, evidently encouraged other companies to enter the field, so that today at least ten other deodorant bar soaps are on the market, not to mention those products sold in department and chain stores under their own private brand names.

The idea of a deodorant toilet soap is, of course, not new. Soaps designed to destroy or reduce body odors have been on the market for a half-century. Perhaps, the best known such product is "Lifebuoy" of Lever Brothers which has been marketed for years, but to some extent during the past year has been overshadowed by the newer products. The odor of "Lifebuoy" some years ago was due almost wholly to the addition of cresylic acid and cresols and had a strong coal-tar character. In recent years, the odor has been changed gradually with a marked reduction in the coal-tar character. On these added cresylic compounds, "Lifebuoy" based its claims of deodorant properties and its famous "B.O." advertising campaign. This type of soap as a class was known generally a decade ago as "health soap," and following on the widespread advertising of "Lifebuoy," numerous imitations in shape, color and coal-tar odor were put on the market at that time. Lever soon ended the career of the imitations by court action.

Various other compounds have been incorporated also in toilet soaps to impart germicidal properties over the years, notably mercury derivatives. However these compounds have marked disadvantages in that they are not only cumulative poisons but also skin irritants. Still other compounds have been added to soaps for supposed deodorizing effect, but some impart an odor to the skin more objectionable than body odor, give no lasting protection, and in general have not met with a favorable reception.

The new hexachlorophene soaps have the advantages of no interference with detergent properties, they are not odoriferous, and may be scented with regular soap perfumes. They are not irritating to the skin. (G-11 has been in use for the past ten years, and no case of dermatitis has been reported). Most important, according to reported tests, the hexachlorophene soaps are actually effective in preventing body odors over a prolonged period. The success of hexachlorophene soaps in the retail market, and increased interest in the product have resulted in numerous inquiries from soap makers as to what hexachlorophene is, who makes it, and where and how it can be obtained.

Chemically, compound "G-11"* or hexachlorophene, is defined as bis(3,5,6-trichloro-2-hydroxy-

* "G-11" is the registered trademark name of Sindar Corp., New York.

phenyl) methane. It is a white crystalline powder, insoluble in water, soluble in acetone, alcohol, and dilute alkalis, has a melting point of 164-165° C. and exhibits antiseptic and germicidal action against micro-organisms. It is prepared by the condensation of two molecules of 2,4,5-trichlorophenol with one molecule of formaldehyde in the presence of concentrated sulfuric acid (3). The original work on the use of hexachlorophene as an antiseptic and germicide in soaps was directed by Dr. Eric C. Kunz and Dr. William S. Gump, president and senior research associate, respectively of Givaudan-Delawanna, Inc., New York. The two inventors filed their patent application in 1940 and replaced this with another application in 1944 (1).

These patents were not allowed by the U. S. Patent Office, which held that since the use of mercurials in soap was already known, and since others had incorporated phenols in soap, there was no invention in making soap germicidal by incorporating hexachlorophene. The case was taken to the U. S. Court of Customs and Patent Appeals, Washington, D. C., which recently upheld the patentability of "G-11" soaps, and reversed the finding of the U. S. Patent Office. The Court stated that Drs. Kunz and Gump had produced an entirely new and useful composition of matter. U. S. Patent 2,535,-077, covering the use of "G-11" in soaps, was to have been issued on December 26, 1950. At time of issuance, Sindar Corp. offered licenses on a royalty basis to manufacturers of soap containing "G-11."

Although a license fee will now be charged, the price of "G-11" has been reduced (made possible by increased production facilities), so that the cost (including royalty) will now be lower. It is reported that it will cost about $6.70 per hundred pounds of soap (cost includes royalty) to manufacture a bar soap containing two per cent "G-11."

Who Makes "G-11"?

COMPOUND "G-11" is made only by Sindar Corp., New York, a subsidiary of Givaudan-Delawanna, Inc. However, several other companies are reported to be working on compounds designed for similar use. Developments along this line will be followed in the soap industry with considerable interest; particularly since "G-11" is rather costly and, until recently at least, supply has not been adequate to meet expanding demand.

Reviewing the supply picture, when "G-11" first appeared on the market, demand far exceeded supply, limiting the production of hexachlorophene-containing products, and discouraging new firms from entering the market. Recently, however, Sindar has announced that their manufacturing facilities have been enlarged, and production is now adequate to meet any foreseeable demand.

Representative of the new crop of deodorant soaps now available on the retail market are these G-11 products, many of which have been on the market for a year or less. "Dial" (in center of right hand row), the original G-11 bar form soap has been on the market for about three years.

The excellent germicidal or degerming action of hexachlorophene makes it a valuable additive in deodorant soaps, medicated soaps, antiseptic soaps, and industrial soaps, for use in hospitals, restaurants and other food handling establishments. It is used also in shaving creams, body deodorants, baby preparations, veterinary products, washes for surgical equipment, etc. Many other applications are still under development. "G-11" is used in both liquid and bar soaps. It can be added either as a powder or as a concentrated solution in alcohol or acetone at some stage of the soap manufacturing process. It is important that the compound be well dispersed.

Deodorant Toilet Soaps

"G-11" may be added in the crutcher for framed soaps, or during milling in the manufacture of milled toilet soaps. Several soap manufacturers add "G-11" in alcohol or acetone solutions. The hexachlorophene is compatible with soap, and does not lose its bactericidal power in combination with soap.

"G-11" has no effect on the odor of soap, and does not limit the type of perfume incorporated. In the concentrations used, it does not lower the detergency or affect the lathering power of soap. However, it does make the soap sensitive to light. Most of the hexachlorophene soaps now on the market are colored or are a light cream shade. Even the colored soaps darken in the presence of light, acquiring a brownish cast. This discoloration is washed away in the course of lathering the bar, but the cake again darkens on continued exposure to light. Packaged bar soap, protected by its wrapping, is not affected by light; and storage and shelf tests of such a product indicate no discoloration, even after period of four months.

To review the function of "G-11" in deodorant soaps: Tests indicate that perspiration in itself is not malodorous, and that body odor is caused by the decomposition of perspiration due to the attack of bacteria on the skin (9). The bacteria may be classified as resident and transient. Ordinary soap removes the transient flora readily enough, but acts more slowly on the resident bacteria in the deeper layers of the skin (8).

"G-11" is strongly bacteriostatic and bactericidal against *Staphylococcus aureus*, which make up the main part of the resident flora of the human skin (3). Regular use of a "G-11" soap for at least three to five days a week, and applied for a period of one to three minutes at each washing will reduce the bacterial flora to about five per cent of the usual number on the skin (5). This condition can be maintained by regular and exclusive use of hexachlorophene soap. However, much of the value of "G-11" soap is lost if used for a single isolated scrub, as the bacterial flora of the skin regenerate promptly (5).

The theory has been advanced that in addition to retention of its antiseptic power in the presence of soap, hexachlorophene is effective because a certain amount of the chemical itself is retained on the skin after the lather of the soap has been washed away. If this is true, as would appear to be the case, a certain percentage of the new germs invariably deposited on the hands between washings might be prevented from multiplying (1).

Little "G-11" Required

RELATIVELY small amounts of hexachlorophene are effective in making a soap germicidal. However, in spite of the numerous articles on use of "G-11," very little has been reported on the optimum concentration of the compound in the various products. It has been recommended by the manufacturer of "G-11" that from .1 to .2 per cent of hexachlorophene in the lather is desirable for effective germicidal activity. Assuming soap is diluted about 20 times in the course of lathering for normal toilet purposes, a two per cent concentration of hexachlorophene would result in a .1 per cent solution on the skin. Most reports are based on tests made with liquid soaps containing a two per cent concentration of "G-11" (based on the weight of anhydrous soap).

The germicidal activity of soap is increased with larger amounts of hexachlorophene (1). However, the cost of the compound relative to that of the soap does not encourage high concentrations. As indicated previously, the cost of "G-11" plus royalty adds about $6.70 per hundred pounds of soap (6.7 per cent per pound of soap) where the amount of "G-11" added is two per cent, based on the anhydrous weight of soap. Since the average toilet bar soap weighs about four ounces, the cost to the manufacturer is increased by about 1.6 per cent per cake of soap, which normally adds about three cents to the retail price.

The success of "Dial" and of competitive soaps would indicate that the attractiveness of the "deodorant" appeal is sufficiently great with many buyers to overcome the resistance to the higher price.

Hexachlorophene type deodorant soaps now on the market retail for from 13 cents to 25 cents a cake, and range in size from 3½ to 4½ ounces. Several of the soaps refer to the active ingredient by a trade name of the soap manufacturer, as "AT-7," "D-4," "CX-6," and "C-3," with identification of the ingredient as hexachlorophene. However, most of the soaps merely indicate the addition of hexachlorophene, and only "Surex" (Allen B. Wrisley Co., Chicago) and "Stern's (Stern Brothers Co., New York department store) Deodorant Soap" actually specify a two per cent concentration.

"G-11" Cost a Factor

ACCORDING to one manufacturer, the high cost of hexachlorophene soaps presents a definite handicap in the competitive soap field, and unless the price can be lowered, these soaps probably will remain specialty items handled by small firms. In stressing the problem of competing with ordinary toilet soaps, this soaper pointed out that the housewife has to be sold on a new soap selling for twice the price of a popular brand with which she is familiar and satisfied. Still another factor concerning sales of the "G-11" soaps, is contained in the comment by a salesgirl of a New York department store, that soap was her one luxury, and she wanted a "well-perfumed product."

Advocates of the hexachlorophene soap point out, on the other hand, that these soaps can be—and are

Hexachlorophene Toilet Soaps

Product	Ounces per cake	G-11 content	Manufacturer
24-Hour	3.5	...	Lightfoot Schultz Co., New York
Chex	..	...	Hewitt Soap Co., Dayton, Ohio
Charm	4.0	...	Packers Tar Soap, Inc., Mystic, Conn.
Dial	4.5	...	Armour & Co., Chicago, Ill.
Fresh	4.5	...	Pharma-Craft Corp., New York
Faircrest Seven AM	..	...	
Macy's Deodorant Soap	4.5	...	
Saks' Deodorant Soap	3.5	...	
Surex	4.2	2%	Wrisley Soap Co., Chicago, Ill.
Stern's Deodorant Soap	4.5	2%	
Wanamaker's Deodorant Soap			

Above table is only partial compilation of G-11 toilet soaps.

—excellently perfumed, and that the scent of the perfume is all the more effective because the hexachlorophene acts as a deodorant, inhibiting the development of unpleasant body odor.

Another manufacturer was more optimistic about the sales of deodorant soap, mentioning that at least one large "national" soap company was contemplating a deodorant soap. However, he also mentioned that considerable research was being conducted on new deodorizing compounds, aimed wholly toward a lower priced germicidal ingredient.

Liquid Soaps

LIQUID G-11 soaps are used to best advantage as antiseptic soaps, industrial soaps, for pre-operative scrub-up in surgery, for general use by surgeons, physicians, hospitals, clinics, restaurants, and any application where it is important to maintain skin bacterial population at a minimum level. Tests indicate that the effectiveness of "G-11" in reducing skin organisms is greater when it is incorporated in a liquid soap, than when used in a solid vehicle (7). One explanation for this action is the fact that a much larger amount of "G-11" comes into contact with the skin when it is dispersed in a vehicle such as liquid soap (6).

"G-11" is particularly desirable for use by surgeons. Numerous studies on hexachlorophene as used in pre-operative scrub-up and by hospital personnel are described in the literature. The prominent features of the tests indicate a reduced time for pre-operative scrub-up, providing the "G-11" soaps have been used for routine washings for three days previously. The value of "G-11" soaps in reducing pyogenic skin infections has also received considerable mention.

Hexachlorophene soaps in industry serve to reduce the possibility of infections due to small cuts and abrasions. They are recommended also for the reduction of secondary infections which often follow a dermatitis caused by cutting oils (2). One manufacturer mentioned, however, that a full scale use of liquid "G-11" soaps in industry is limited by the high cost of the soap. Except where employees are consistently exposed to materials which may cause dermatitis, etc., general use of the higher priced product is likely to be limited.

However, the large-scale production program on which America is now embarking makes time lost from the job a serious problem, and it has been reported by state compensation boards that 65 per cent of all cases of in-plant lost time is due to dermatitis. One manufacturer sees in these figures the justification for the use of soaps containing hexachlorophene.

Hexachlorophene detergents are not limited to soap combinations. The compound is being used also with a detergent cream composed of sodium octylphenoxyethoxyethyl ether sulfonate, lanolin, cholesterols, and petrolatum ("pHisoHex"* made by Winthrop-Stearns, Inc., New York). Three per cent hexachlorophene, based on the total weight, is incorporated in the product; this concentration is equivalent to about 18 per cent on the basis of detergent ingredients (compared with soap products of one to three percent "G-11"). The hexachlorophene is incorporated in the oils of "pHisoHex" during its manufacture, to insure a stable and homogeneous preparation. The name "pHisoHex" has been authorized by the Council on Pharmacy and Chemistry of the American Medical Association for use in designating the type of "pHisoderm" known formerly as "pHisoderm with hexachlorophene 3%."

The product "pHisoHex" is recommended particularly for use in pre-operative scrub-up, and in treating certain infectious diseases. The several types of "pHisoderm" are used as detergents by persons allergic or sensitive to ordinary soaps. It is effective in any kind of water, under acid or alkaline conditions, and possesses active emulsifying, sudsing and dispersing properties. "pHisoderm" is suitable for shampoo purposes.

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* Trademark of Winthrop-Stearns, Inc., New York.

SHAMPOOS...

By Milton A. Lesser
Part II

THE production of clear liquid shampoos from synthetic detergents is simpler than making soap shampoos. In general, the procedure consists in mixing the detergent with the requisite quantity of water, followed by incorporation of any desired additives, such as thickeners, conditioners, perfume and color.

As remarked by Hilfer, (16) aside from soaps, the most popular agents used in shampoos are the anionic sulfate detergents. Their popularity stems from the fact that they are excellent detergents and outstanding foam producers. In addition, they are capable of doing their work in the presence of hard water salts that would precipitate soaps. Since no precipitation takes place with the sulfated detergents, the hair appears cleaner when such compounds are used.

Schwartz and Perry (6) point out that if a synthetic detergent is to be used successfully in a shampoo, it must have good solubility, must produce the desired type of foam and must be free of harsh or irritating effects. In addition it should be relatively free of inorganic salts. They note that many synthetic detergents have been tried as shampoo ingredients, but only a relatively few have received a high degree of acceptance. In the U. S. the highly sulfated fatty oils and fatty acid esters, the fatty alkyl sulfates, and the sulfated fatty acyl monoglycerides are the most widely used.

Some of the materials employed with soap-based shampoos may also serve as viscosity modifiers or thickeners for clear solutions of synthetic detergents. For example, in discussing the value of fatty alcohol sulfates for shampoos, Pantaleoni, Shanks and Valentine (21) state that polyvinyl alcohol, methyl cellulose, and sodium alginate may be employed to increase viscosity and as protective colloids. Harris (12) notes that salts such as sodium sulfate, sodium chloride and alkaline salts, as well as salts of organic acids, may produce an increase in viscosity. Far more effective, however, is substitution of magnesium or calcium for sodium in these salts; a very small amount being needed to produce a given effect. Observing that such shampoos can be frozen, Thomssen (15) considers it advisable to include materials like alcohol, glycerine or propylene glycol.

One of the chief disadvantages of the synthetic detergents, at least insofar as shampoo formulation is concerned, is their tendency to be excessively drying. This drying effect, it has been explained, may be an actual skin irritation caused by the lower alkyl radicals or may be merely the result of too thorough a cleansing.

Conditioning Agents

THIS difficulty has been overcome to a great extent through the use of a number of so-called conditioning agents. As remarked by Harris, (12) among the first and most obvious materials for combatting the harsh effects were mineral oil, a vegetable oil, lanolin or lecithin. In addition to lanolin (which has found extensive use) and lecithin, other agents which have served successfully as conditioners include certain polyethylene glycols and their stearates, diglycol laurate, diglycol oleate, diglycol stearate, ethyl stearate, glyceryl monostearate, glyceryl monoricinoleate, propylene glycol stearate, and nonaethylene glycol monostearate. Obviously not all of these agents are useful in making clear shampoos since they may produce opacity as well. Harris also points out that to prevent the drying effect, one widely sold shampoo uses the triethanolamine salt of the detergent rather than the sodium, potassium or ammonium base.

It has been said (22) that there is an almost unlimited choice of perfumes for use in shampoos based on sodium lauryl sulfate, sulfoacetate

and other detergents of a similar nature. However, one group of investigators (21) points out that the fatty alcohol sulfates have a slight odor reminiscent of the alcohols from which they are made. They note that there is a limited number of perfume components which blend favorably with these shampoo materials. The need for careful perfuming is stressed by these workers.

It is, of course, quite possible to make a liquid shampoo by dissolving a suitable quantity of a detergent, such as triethanolamine lauryl sulfate, in water; perfume and color being added as desired. More commonly, however, viscosity modifiers, conditioners and other agents are added to the shampoos to make them more appealing to the purchaser, increase

	Parts
Sulfated fatty alcohol, liquid	30.0
Glycerine	5.0
Sodium alginate	0.5
Oleyl alcohol	1.0
Perfume compound	0.5
Water, to make	100.0

Of course, other types of detergents may be used to advantage in producing liquid shampoo. Griffith, (23) for example, recommends the dioctyl ester of sodium sulfosuccinic acid for this purpose. Available commercially as "Aerosol OT" (American Cyanamid Co., New York), it can be used not only in standard type shampoos, but also in more specialized products, such as the following shampoo for oily scalps:

	parts
"Aerosol OT" (100%)	10
Alcohol	25
Water	65

For dry scalps he recommends

single product. This is illustrated in the following patented formula, (26) in which the combination causes a desirable increase in the viscosity of the solution and helps to stabilize it against low temperatures:

	parts
Sodium lauryl sulfoacetate	4
Sodium 2-ethylhexyl sulfoacetate	9
Sodium n-hexyl sulfoacetate	4
Trisodium citrate	2
Gum karaya	1
Water	80

Similarly, according to Jannaway, (20) it may be advantageous to combine soap with a synthetic detergent. Thus, mixed-type shampoos, of excellent lathering properties, may be prepared by adding 10 per cent or so of a soluble sulfated fatty alcohol product or other suitable wetting agent to a conventional liquid soap

their stability and improve their action. Even so, as indicated in the following formula (18) for a "soapless" shampoo, the composition need not be complex:

	parts
Sodium alky aryl sulfonate	20
Glycerine	8
Water	72
Perfume and color	sufficient

Mix the ingredients and set aside for one week. Filter until brilliantly clear.

Equally simple, and producing a clear shampoo with good body and appearance, is a product made from: (21)

	parts
Fatty alcohol sulfate ("Duponol" WA Paste, ST or SN)	35.0
Sodium alginate	2.5
Water	62.5

The sodium alginate is added to the fatty alcohol sulfate with warming to 50°C. and the water is added.

Somewhat more rounded is a liquid shampoo, consisting of: (20)

a product made by dissolving 10 per cent of this detergent in olive oil, the oil being heated to 70°C. Perfume may be added, if desired.

Flett, (24) a leader in the development and use of synthetic detergents, suggests in one of his patents, that certain derivatives of sulfosuccinamic acid are suitable for making hair shampoos. They may be thickened with methyl cellulose and mixed with perfume and dye. According to a foreign patent, (25) certain protein-fatty acid condensation products may be used to make shampoos. The foaming and cleansing power of these products may be improved by adding sodium hexametaphosphate. Detergents of this class are known abroad as the "Lamepons", but are available in this country under the name of "Maypons" (Maywood Chemical Works, Maywood, N. J.)

Sometimes it is advantageous to combine several synthetics in a

base. Although the advantages of such combinations may be questioned, he states that they are readily apparent in actual practice.

Although the anionics hold the dominant position among the synthetic detergents used in shampoos, the non-ionic types are also receiving attention. (16) Barker (27) observes that, because of their non-irritating characteristics, non-ionic detergents make interesting shampoos. Illustrative is the following formula for a foamless shampoo which shows excellent cleaning action and leaves the hair and scalp in good condition:

	per cent
Non-ionic detergent (Tween 80* or Renex*)	20
Lanolin	5
Sorbitan sesquioleate (Arlacel C*)	1
Sodium carboxymethyl cellulose (high viscosity)	2
Water	72
Preservative, perfume, etc.	sufficient

(*Atlas Powder Co., Wilmington, Del.)

The oils are melted together

and added to the cellulose-water gel with vigorous stirring. The viscosity may be varied as desired by the type and quantity of carboxymethyl cellulose used.

According to the technical literature of one producer, a non-foaming shampoo, that is especially effective for removing loose dandruff, can be made by dissolving 14 parts of weight of a non-ionic detergent ("Ethofat 242/25", Armour Chemical Division, Chicago) in water, and perfuming to suit. In the shampoos based on non-ionics, it is also possible to incorporate anti-bacterial quaternary ammonium compounds. The addition of such an agent may also help to soften the hair.

While the non-ionics may help to restore the status of foamless shampoos, the popularity of the older non-foaming oil shampoos has long been on the wane. While some of these older products contain a high proportion of castor or peanut oil, most so-called oil shampoos contain only a small proportion of unchanged oil and derive their name from their viscous oily appearance. The basis of such products is sulfonated (sulfated) vegetable oils. Sulfonated castor oil or olive oil is commonly used, but occasionally other types of oil, such as sulfated rice bran oil,(28) are suggested.

As noted by Schwartz and Perry,(6) such shampoos are applied to the hair with little or no water and, after working, are rinsed off with warm water. These products leave a considerable deposit of residual oil on the hair. They are sometimes used in preliminary treatments, to be followed by the use of a regular foaming shampoo. Such combination shampooing, they observe, is quite effective where the hair and scalp have become excessively dirty.

As cited by Jannaway,(5) such a shampoo may consist of equal parts of mineral oil, sulfonated castor oil, oleic acid and isopropyl alcohol. More commonly employed, however, are preparations such as the following:(15)

	parts
Sulfonated castor oil (75%)	60.0
Sulfonated olive oil (75%)	20.0
Mineral oil, light	3.0
Water, distilled	14.0
Glycerine	3.5
Perfume	0.5

The first four ingredients are combined by mixing. The perfume is mixed with the glycerine and this mixture is added to the other blended ingredients.

Cream Shampoos Popular

LIQUID cream—or creme—shampoos are growing in popularity. These products may be formulated with a soap or synthetic detergent as the main cleansing agent. Such shampoos also contain an opacifying agent. Sodium stearate is commonly used as the opacifier, but the glyceryl monostearate type of compound may be used for this purpose.(6)

Pantaleoni and his colleagues (21) observe, however, that potassium stearate is preferred to sodium stearate for certain liquid cream shampoos. Referring to other opacifiers, they cite magnesium stearate as one of the better whiteners. Good results are also obtained with higher alkyl esters such as stearyl palmitate, stearyl laurate and cetyl laurate. Some of the higher alcohol sulfates, they note, can be used for the same purpose. Cetyl alcohol is considered especially valuable in liquid cream shampoos and serves both as a stabilizer and a whitening agent. Stearyl alcohol is also satisfactory.

Three carefully checked formulas for making liquid cream shampoos are given in their report. The following is an example, providing a milky liquid shampoo with good body and a pleasant emollient effect:

	parts
Fatty alcohol sulfate ("Duponol" ST)	35
Magnesium stearate	4
Polyvinyl alcohol (10% solution)	6
Lanolin	1
Glyceryl monolaurate	2
Cetyl alcohol	2
Water	50

The magnesium stearate is pasted with the fatty alcohol sulfate; adding the polyvinyl alcohol and the water. The mixture is heated to 77°C. The cetyl alcohol, lanolin and glyceryl monolaurate are heated together to the same temperature. The water phase is then added to the oil phase, with agitation.

Somewhat simpler is the following frequently cited formula(29) for making a liquid cream shampoo:

Cetyl alcohol	15 Gm.
Propylene glycol	10 Gm.
Beeswax	2 Gm.
Sodium lauryl sulfate	2 Gm.
Water to make	100 cc.

Melt the fats and the propylene glycol and bring to 65°C. Dissolve the sodium lauryl sulfate in the water and bring to 65°C. Under rapid agitation add the water to the fats. When the emulsion is complete add 50 Gm. more of sodium lauryl sulfate dissolved in enough water to bring the total volume to 500 cc.

The presence of beeswax in this formula brings to mind a recent patent(30) describing lotion shampoos in which waxes or related materials are important ingredients. Products which clean the hair thoroughly yet leave it with a high luster and in a relatively soft condition are prepared as colloidal dispersions of waxy solid particles suspended in a detergent liquid. Various waxes, higher alcohols and the like, or certain hydrogenated oils or fats may be used, but carnauba wax is greatly preferred. The detergent liquid may consist of soap or synthetic detergent or mixtures of these materials.

As indicated in the surveys (3, 4) cited above, cream shampoos command a very substantial following. In the main, it may be said(6) that these paste cream shampoos are similar in composition to liquid cream shampoos, but are more concentrated with respect to both detergents and thickeners. In his report on such products, Beach(31) stated that cream shampoos are formulations of soaps or synthetic detergents, together with superfatting and hair conditioning agents, all intimately mixed or emulsified with water. Sometimes additional emulsifying agents are used.

He states that the soaps used in cream shampoos are made from various mixtures of lauric, palmitic, and stearic fatty acids, partially or completely saponified with caustic

soda or potash, or amine compounds, depending on the consistency desired. The mono- and triethanolamines are the most commonly used amines, the triethanolamine sometimes being partly replaced with isopropanolamine to produce greater color stability.

Paste Shampoos

IN a more recent discussion of cream shampoo formulation, Morel(32) remarks that there is nothing particularly new in the idea of a viscous, paste-like shampoo. He notes that soft soaps of the olive, castile and coconut types were very popular a few decades ago and are still used, to a limited extent, by hair-care professionals. Speaking of the modern products, he states that if soap is used it is preferably a free-lathering product, such as one of the coconut type. Coconut oil fatty acids may be used, and the alkali may be triethanolamine, potash, soda or a mixture of these agents. Certain soluble salts may be included for their lathering, water-softening and other actions. Among the most effective are sodium hexametaphosphate and tetra-sodium pyrophosphate.

Of course other methods may be used to make soap-based cream shampoos. It has been suggested,(33) for example, that a cream shampoo can be made from ordinary shampoo by simply reducing the water content. To produce opacity, one of the following may be added: lanolin, spermaceti, a higher alcohol, propylene glycol stearate, mineral oil, or petrolatum. Of interest in this connection is the following formula(34) for a shampoo cream:

	parts
Mineral oil, white	38
Diglycol laurate	10
Liquid soap (33-35%)	52
Perfume	sufficient

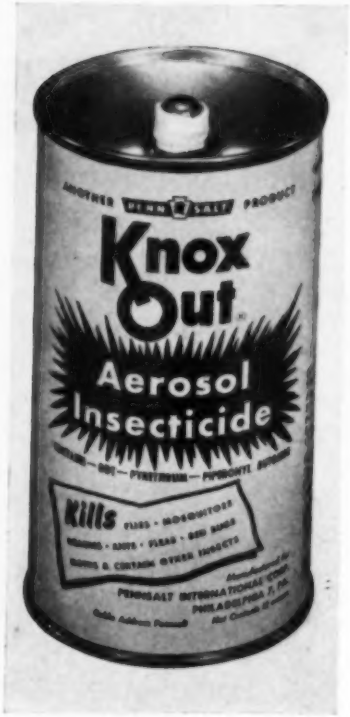
Several writers(32, 35) have pointed to the familar fact that shaving cream is often used as a shampoo. Jannaway,(5) however, feels that most shaving creams contain too high a proportion of stearic acid for optimum efficiency as a shampoo. He advises that a shaving cream formula —and there are many available—may be adjusted by increasing the coconut oil or palm kernal oil content.

The large proportion of modern cream shampoos are based on synthetic detergents. Speaking of these comparative newcomers, one authority (20) has remarked that properly formulated cream or paste shampoos can be efficient cleaners of the hair and scalp without exhibiting such defects as lime soap formation, excessive defatting action, or poor lathering properties. The paste medium, he notes, provides ample scope for the use of modern synthetic detergents, dermatologically acceptable emollients, and a variety of other special ingredients.

As indicated by Schwartz and Perry,(6) the most popular types of paste cream shampoo employ sodium lauryl sulfate as the detergent and

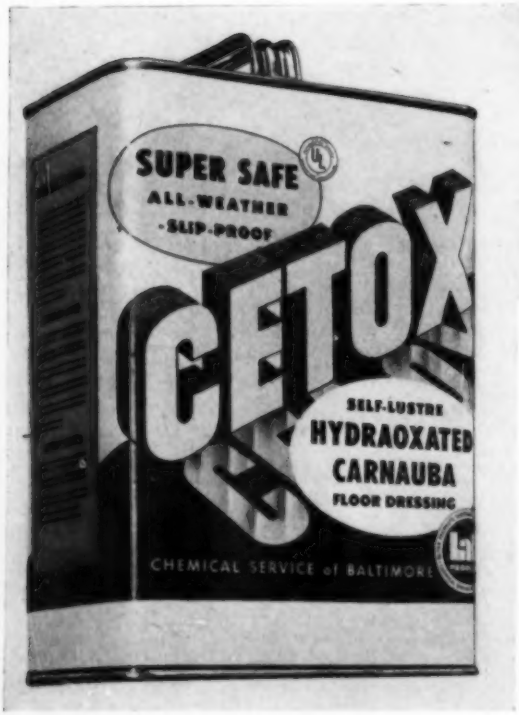
(*Turn to Page* 115)

WHAT'S



Newest addition to its line of "Knox Out" insecticides is the 12-ounce aerosol package, announced recently by Pennsylvania Salt Manufacturing Co., Philadelphia. The new member of the line contains DDT, pyrethrum and piperonyl butoxide. Designed for use against most common household insects, the unit is offered for domestic use by the B-K and household products departments of the company.

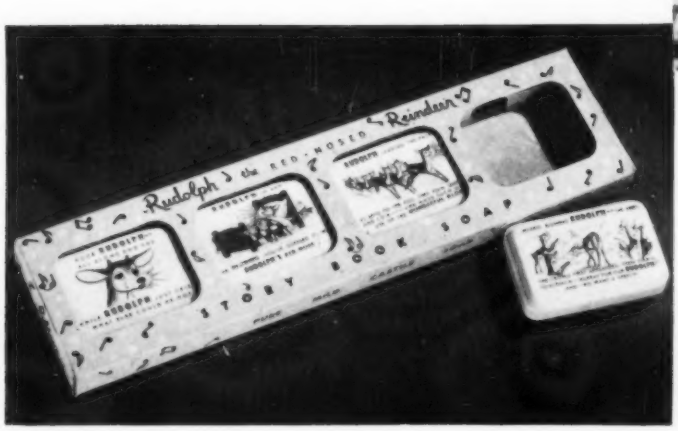
Newest of the novelty soap packages aimed at the juvenile market is the "Hopalong Cassidy Bath Roundup" set brought out recently by Daggett & Ramsdell, Inc., Newark, N. J. The colorful set includes two four ounce cylinders of bubble bath and a sculptured cake of castile soap in the shape of Hoppy's famous horse, "Topper." Trading cards in color of the famous star and his horse are also included in the package, which retails for $1.00.



New "Cetox" floor wax that contains hydraoxated carnauba wax was announced recently by Chemical Service of Baltimore, Baltimore, Md. The new wax is claimed to resist heavy wear, frequent damp moppings and to be safe when wet. Drying to a high lustre, the wax is said not to be affected by freezing.

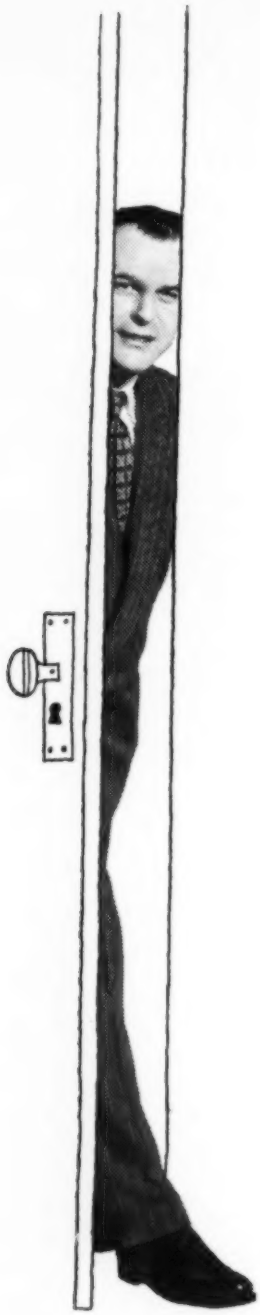
NEW?

"Savon Joy", luxury soap complement to "Joy" perfume and "Poudre Joy", was announced recently by Jean Patou, Paris. A pure French milled complexion soap, "Savon Joy" is deeply scented with the same fragrance as its perfume counterpart. Cakes are individually wrapped and packaged in distinctive white box engraved with name and monogram of Jean Patou. Available in one size only, the soap retails for $2.50 a cake.



New "Rudolph the Red Nosed Reindeer" soap of Rubicon Manufacturing Co., New York, features full-color decalcomanias made by Meyercord Co., Chicago. Soap is packaged in four bar units with each soap cake having a different picture of "Rudolph" and a verse of the song. Decals are said to last for life of the bar.

"Dri-Glo", a new all-in-one polish containing silicone was introduced in New York recently by O-Cedar Corp., Chicago. The cream cleans and polishes a variety of surfaces, giving a hand rubbed gloss, according to the maker. The material is applied in a circular motion with a dry cloth, allowed to dry, then rubbed off. Coating is said to last two or three months.



"high-light" Kreelon is sales-tested

What do we mean "sales-tested"? Just this. Before Wyandotte "high-light" Kreelon* leaves our plant, it is given a 3-way detergency test. We not only test Kreelon on an "as-is" basis, but also as a "built" product. We test Kreelon not only for soil removal and whiteness retention, but also for promotability with Carbose (Sodium CMC).

Result? When you buy Kreelon, you get a product that you *know* will perform — built or unbuilt. You get a product that's white in color — clear in solution. Yes, you get a product that keeps its foot in customers' doors.

*Reg. U. S. Pat. Off

SODA ASH • CAUSTIC SODA • BICARBONATE OF SODA
CALCIUM CARBONATE • CALCIUM CHLORIDE • CHLORINE
HYDROGEN • DRY ICE • SYNTHETIC DETERGENTS • GLYCOLS
CARBOSE (Sodium CMC) • ETHYLENE DICHLORIDE • PROPYLENE
DICHLORIDE • AROMATIC SULFONIC ACID DERIVATIVES
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TRADE NEWS

Ups Syn. Glycerine Output

Shell Chemical Corp., New York, announced recently that it is expanding its facilities for the production of synthetic glycerine. The announcement was made at a time when supplies of glycerine, reportedly reduced because of the major expansion in the production and consumption of synthetic detergents, were tighter than at any time since the end of World War II. Glycerine prices were advanced recently three cents a pound by two major producers bringing the cost of material to record levels.

Through expansion of its facilities in Houston, Tex., Shell will increase synthetic glycerine production from an estimated 35,000,000 pounds to 50,000,000 pounds per year.

Expands in Detergent Field

Expansion of its activities into the field of synthetic detergents was approved recently by a vote of stockholders of United Dyewood Corp., New York. Stockholders also favored permitting the company to widen its scope beyond the chemical field and to change its name to United Dye & Chemical Corp. David S. Fischman, president of the firm, stated at the stockholders' meeting in Wilmington, Del., that pilot plant operations on detergents are now going on at the Chester, Pa., plant. Detergents for industrial purposes in carloads and tank shipments, but not for retail, are to be made, he said.

Chase P&G Advg. Manager

The appointment of W. R. Chase to the newly created post of advertising manager was announced recently by Howard J. Morgens, vice-president in charge of advertising for Procter & Gamble Co., Cincinnati. At the same time, Mr. Morgens announced the creation of two brand promotion divisions and the appointment of D. H. Robinson and E. A. Snow as their managers.

Mr. Chase was appointed manager of the brand development division of the advertising department of P&G in 1947.

W. R. CHASE

A. N. Halverstadt continues as manager of the broadcasting, media and art division, and C. C. Uhling as manager of the merchandising division.

W. F. Rightor Dies at 77

William Francis Rightor, 77, at one time sales manager for Mennen Co., Newark, N. J., died recently at his home in Flushing, N. Y. He held similar posts with a number of the leading toiletries and perfume houses. He retired in 1935.

First Yardley TV Show

The first television program to be sponsored by Yardley of London, Inc., New York, is the "Tex (McCrary) and Jinx (Falkenberg) Show," telecast five nights a week from 6:30 to 6:55 p.m., it was announced recently. The first show was presented Jan. 5. Miss Falkenberg conducts demonstration type commercials on Yardley products on the interview style program.

Riemen Joins Economics

H. A. Riemen, formerly of Essential Chemical Co. and Kalu, Van Pieterson Dunlap Associates, both Milwaukee, was recently appointed as promotion manager of Economics Laboratory, Inc., St. Paul.

Breck Names Bartlett

John Bartlett was recently appointed to cover the drug and department store field in New England for John H. Breck, Inc., Springfield, Mass. He takes the place of Al Adams, former Breck New England representative, who has been recalled to active service with the U. S. Army.

Edward J. Breck, vice-president and general manager of the firm, was appointed recently to the board of trustees of the American Fair Trade Council.

Fels Home to U. of P.

The deed to the 25 room Colonial home of Samuel S. Fels, deceased head of the soap firm bearing his name, was turned over recently to the University of Pennsylvania by Jerome J. Rothschild, president of the Samuel S. Fels Fund.

George Wrisley, Jr. Injured

George Wrisley, Jr., sales manager of the private brand division of the Allen B. Wrisley Co., Chicago soap manufacturers, was injured seriously on December 3 at La Grange, Ill. when his automobile swerved from the road and struck a light pole at Ogden and East Aves. of that city. He is reported to have sustained a fractured wrist, fractured ribs and a possible hip fracture. His wife who accompanied him was less seriously injured. Both were rushed to the Hinsdale Sanitarium in La Grange following the accident. Mr. Wrisley is the son of George Wrisley, vice-president of the well-known soap company, and a grandson of its founder, Allen B. Wrisley.

Edmund R. Holmes Is Dead

Edmund R. Holmes, 68, secretary and treasurer of White Soap Co., Chicago, died Dec. 2. He is survived by his widow, Marie, and three sisters.

Marshall a Consultant

Albert E. Marshall, former president of Rumford Chemical Works, and more recently vice-president of the Rumford Division of Heyden Chemical Corp., New York, recently opened an office in the Industrial Trust Building, Providence, R. I., to resume practice as a consulting chemical engineer.

Huisking to Brooklyn

Removal of its operations on Varick Street, New York, to 45 Clinton Ave., Brooklyn, was announced recently by Charles L. Huisking & Co. The move also affects the various divisions of the company. The plant and warehouse which previously housed Conti Products Corp., at the Clinton Avenue address have been purchased by the Huisking company as the site for its new Brooklyn headquarters. Conti was recently merged into J. B. Williams Co., Glastonbury, Conn., where the Conti operations are now located.

Continuous Process Talk

A report on "Continuous Soap Production" by L. D. Jones, research director of Sharples Corp., Philadelphia, Pa., highlighted the Dec. 5 meeting of the Northeast Oil Chemists Society, held at the Building Trades Employers Association, New York. The meeting also heard a report by John P. Harris of Industrial Chemical Sales, Chicago, on short courses presented by the American Oil Chemists Society. Mr. Harris is chairman of the Society's education committee.

The Sharples process of soapmaking is based essentially on the application of centrifuges to the rapid separation of soap and lye, taking the place of kettles, with such supplementary equipment as is necessary to make the process continuous. Savings in steam are one of the advantages of the continuous process; but even more commendable is the lye to finished soap ratio. Some of the figures on such data are as follows:

	Glycerine in soap per cent	Glycerine in lye per cent	Lye Ratio
Toilet Soap	.30	17.5	.41
Laundry Soap ..	.30	14.3	.38
	.35	15.7	.34

Applying the centrifugal process to rosin soaps, the rosin is saponified first (using soda ash not caustic) and added in about the third stage.

Robert M. Albright Dies

Robert Mather Albright, 31, sales executive for Pacific Coast Borax Co., Los Angeles, and son of H. N. Albright, president of United States Potash Co., died recently following an operation. He had been in poor health for several years.

Detrex Moves N. Y. Office

Detrex Corp., Detroit, has just announced plans to move its eastern sales division from 350 Fifth Avenue, New York, to newly-leased space at 39 Park Place, Englewood, N. J.

A folder describing its new multi-purpose cleaning compound, "Detrex 10," has just been issued by the firm. Recommended uses for the product include medium-duty soak tank cleaning and as an electrolytic cleaner for ferrous metal parts. It is also recommended as a water conditioner for all types of water-wash paint spray booths. A folder covering the product is available on request from Detrex at Box 501, Detroit 32, Mich.

More G.D.C. Detergents

An increase in its production facilities for detergents and other surface active agents is being brought about with an investment of more than $2,000,000 in new construction and equipment, it was revealed recently by General Aniline & Film Corp., New York. The announcement was made by Dr. Cary R. Wagner, vice-president in charge of operations, at a two-day conference of sales managers at the company's central research laboratories in Easton, Pa. last month. The new facilities are for the Grasselli, N. J., and Rensselaer, N. Y. plants.

Among those addressing the conference, called for the purpose of acquainting sales managers with the special list of chemical products, including detergents, wetting agents and other surface active agents, which are now being sold through the Antara Products Division of General Dyestuff Corp., were: J. C. Franklin, executive vice-president of General Dyestuff. Also speaking were Harold G. Shelton, manager of the Antara Products Division; Dr. H. B. Hass, director of research; Dr. J. H. Brunn, director of the Central Research Laboratories; W. L. Swenson, sales manager and J. R. Bonnar, technical service and new products manager of General Dyestuff; Dr. Joseph Lang, manager of the Rensselaer plant and Dr. P. M. Kirk, manager of General Aniline's central sales development department.

Top company and sales executives pictured below are left to right, seated: Warren M. Dewing, GDC manager, Boston; Harold G. Shelton, general manager, Antara Products Division; F. E. Hilger, GDC manager, Chicago; Dr. J. H. Brunn, director, Central Research Laboratories; J. C. Franklin, GDC executive vice-president; W. A. Lord, GDC manager, Providence. Standing: H. A. Horstmann, GDC manager, New York; W. L. Swenson, GDC sales manager; Dr. Cary R. Wagner, GAF vice-president in charge of operations; Dr. H. B. Hass, GAF director of research; B. K. Archer, GDC manager, Philadelphia; and S. H. Williams, GDC manager, Charlotte, N. C.

New C-P-P, P&G Kansas City Units

EXPANSION of the synthetic detergent production facilities of Colgate-Palmolive-Peet Co., Jersey City, N. J., and Procter & Gamble Co., Cincinnati, in Kansas City, Mo., is now underway. The $2,000,000 expansion program is designed to supply the growing demand for synthetic detergents in the southwest.

A permit for preliminary construction was issued to P&G Nov. 20. The firm estimated the cost of the proposed building at $200,000 in securing the permit. P&G has acquired a 10-acre site on the north side of its present Kansas City plant on which it is building spray towers, tanks, pumps and distillation equipment designed to tie in with the detergent production facilities of the main plant.

Colgate-Palmolive-Peet Co. is building a 62-foot extension to its main plant, which when completed will vary in height from four to six stories.

Blueprints submitted to the city building inspector by Procter & Gamble identify various parts of the construction as water storage tanks, firehouse, cooling towers, control building, pump and pump discharges, distillation area, underground oil tanks, boilers, sodium scale house and sodium unloading buildings.

The last project completed at the P&G plant was an addition to its soap, distillation and processing facilities. That improvement, which was estimated to have cost about $750,000, was on a 50 by 80 foot tract of ground at the southwest corner of the plant.

The new Colgate project will be an extension of its detergent production facilities completed a few years ago. The addition is expected to double production capacity. The C-P-P building for the production of toilet articles under construction for about a year is expected to be completed and in operation this month.

Soap Powders Raised

A wholesale price increase of 3½ per cent on soap powders was announced recently by Procter & Gamble Co., Cincinnati. A similar increase was made on the wholesale price of "Crisco" shortening.

The price increase on soap powder amounts to about one cent for the regular size box, and is the third advance in three months. The total of the increases is four cents. Increased prices of raw materials was given as the reason for the price advances by a P&G spokesman.

Oil Chems. Meet May 1-3

J. A. Kine of the Southern Regional Research Laboratory, New Orleans, was recently appointed general chairman for the 1951 spring meeting of the American Oil Chemists' Society, which will be held at the Roosevelt Hotel, New Orleans, May 1-3. T. H. Hopper is program chairman, and W. S. Singleton is in charge of reservations. Others serving on the convention committee include: C. L. Hoffpauir, publicity; J. J. Guancheau, annual dinner; F. G. Dollear, golf; A. F. Freeman, hotel reservations; E. A. Gastrock, treasurer, and Mrs. Gastrock, women's program.

Gen. Chem. Names Suellau

General Chemical Division of Allied Chemical & Dye Corp., New York, announced recently the appointment of Vincent Suellau as director of sales. A member of the General Chemical sales organization for 30 years, he has been a heavy chemicals sales manager since 1944. Mr. Suellau succeeds Chester M. Brown, recently appointed a vice-president. Earlier Mr. Suellau served as manager of the division's sales offices in New York, Buffalo, Cleveland, Chicago, St. Louis, Los Angeles and San Francisco.

VINCENT W. SUELLAU

Brillo Earnings Rise

An increase in its earnings and net profit for the first nine months of 1950, as compared with the comparable period of 1949, was reported recently by Brillo Manufacturing Co., Brooklyn. In the first nine months of 1950, the company reported a net income of $555,017, equal to $3.73 a common share, as against $415,886, or $2.71 in 1949. Profit is before $275,000 provision for construction and replacement in 1950 and $175,000 in 1949. For the quarter ended Sept. 30, 1950, a net income of $147,102, equal to 98 cents a common share was reported, a gain over the 1949 quarter, when net income was $128,238, or 83 cents a share.

Charles Auverman Dies

Charles Auverman, 63, of Roselle, N. J., for 24 years employed by Procter & Gamble Co. at Staten Island, N. Y., died after a long illness in Elizabeth, N. J., General Hospital, recently.

C-P-P Bonus, Dividend

Payment of an extra dividend to stockholders and a bonus of two weeks' additional salary to domestic employees not on a regular bonus or commission plan were announced recently by E. H. Little, president of Colgate-Palmolive-Peet Co., Jersey City, N. J.

The board of directors authorized that an extra stock dividend of $1 per share in cash and five percent in common stock be paid to stockholders of record Dec. 13, 1950. The cash dividend, which is in addition to the $2 per share regular dividends already paid in 1950, is payable to stockholders on the 1,997,236 shares now outstanding.

SINDAR CORPORATION

ANNOUNCES LICENSING POLICY ON GERMICIDAL SOAP PATENT

Sindar patent No. 2,535,077 issued December 26, 1950, covers germicidal soaps containing 2,2′-dihydroxy halogenated diphenyl methanes such as **G-11® (brand of hexachlorophene).**

We are proud to announce that this outstanding result of Sindar research has been awarded patent protection, and we are happy to share the benefit of the patent with the soap industry by granting licenses to soap manufacturers on a reasonable royalty basis, effective January 1, 1951.

Address inquiries to Sindar Corporation.

SINDAR *Corporation*

Industrial Aromatics and Chemicals

330 West 42nd Street, New York 18, New York

Branches: Philadelphia • Boston • Cincinnati • Detroit • Chicago • Seattle • Los Angeles • Toronto

Cos. Chems. Discuss Shampoos

ELECTION of Dr. Everett G. McDonough of Evans Research & Development Corp., New York, as president, and discussions of shampoo evaluation and "G-11" type soaps were the highlights of the annual meeting of the Cosmetic Chemists' Society, held Dec. 5, at the Hotel Biltmore, New York.

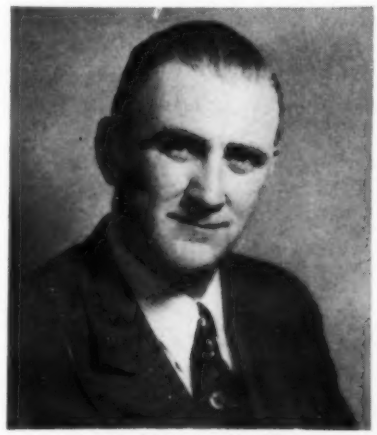
Another feature of the meeting was the presentation of the 1950 Medal Award to Dr. Eric C. Kunz, president of Givaudan-Delawanna, Inc., New York, for his contributions to the art and science of cosmetics.

Other officers elected at the meeting were Dr. S. D. Gershon, Pepsodent Division of Lever Brothers Co., New York, as vice-president; Robert G. Kramer, Evans Chemetics, Inc., secretary, and Moody L. Crowder, Ponds Extract Co., New York, treasurer.

In his report on "A Quantitative Method for the Evaluation and Study of Shampoos," prepared by G. Barnett and D. H. Powers of Richard Hudnut Co., New York, Mr. Powers pointed out that most commercial shampoos act as finishing agents rather than as hair cleaners. Lanolin, oil and softeners are added to the shampoos to provide a finish to the hair. As a result in many cases shampoos have become overloaded with these additives, he stated. Twenty-one commercial shampoos tested for soil removal from yarn impregnated with standardized wool fat were found to give from zero to 90 percent soil removal.

Several shampoos were less effective than water alone, Dr. Powers stated, adding that synthetic detergents generally removed from two to three times as much soil and grease as those which were made from the fatty acid soaps. Quaternaries increased the soil on the fibre, the speaker declared.

Arthur R. Cade of Sindar Corp., New York, described "A Procedure for Testing the Degerming Efficiency of Hexachlorophene Soaps." In this method, test washings are run on four days during two weeks in which medicated soaps are used, namely Monday and Friday and on Thursday and Friday of the following week. A color motion picture showing details for the



EVERETT G. McDONOUGH

test procedure was presented, together with slides showing data obtained.

Packing of shampoos, shaving creams, etc. in aerosol "bombs" was discussed in a paper: "Pressure Packaging of Cosmetic Products" by Earl Graham of Crown Can Co., Philadelphia. He stated that each new product requires accelerated storage tests before release for commercial production. He also outlined the public health and safety requirements covering aerosol products, some of the history and development of which was also covered. Mr. Graham also made the point that the future of pressure packaging for shampoos, shaving creams, etc., is good if pressurizing is functional in addition to having "gadget appeal."

Essential Oil Assn. Meets

Officers for the coming year were elected at the 22nd annual meeting of the Essential Oil Association, held Jan. 5, at the Savoy Plaza Hotel, New York. Gerard J. Danco of the New York firm bearing his name was elected president, George McGlynn, Magnus Mabee & Reynard, Inc., New York, vice-president and William S. Fairhurst of Tombarel Products Corp., New York, secretary-treasurer. Ray Schloterer continues as E.O.A. managing director. Announcement of the annual meeting of the association was made by its president, Hans P. Wesemann of Fritzsche Brothers, Inc., New York, at the annual meeting of the scientific section of the Essential Oil Association, held Dec. 7, at the Advertising Club, New York. At that time specifications were presented and approved for 13 essential oils and for four tests for gums and resins of vegetable or animal origin.

Eric C. Kunz, Givaudan-Delawanna, Inc., New York, chairman of the scientific section, presided at the technical sessions of the meeting. In his introductory remarks he reviewed the work done in the past, pointing out that 43 specifications had been approved by the association.

Oils on which specifications were approved at the meeting include: amyl cinnamic aldehyde; oil of geranium; methyl phenyl carbinol; methyl phenyl carbinyl acetate; oil of Siberian fir needles; oil of geranium (Reunion); linalool from boise de rose; phenyl propyl alcohol; aldehyde C-12 lauric; aldehyde C-12 MNA; oil of cinnamon leaf; oil of clove leave; oil of dill weed, American. Four tests were approved for gums and natural resins.

New Waterless Cleaner

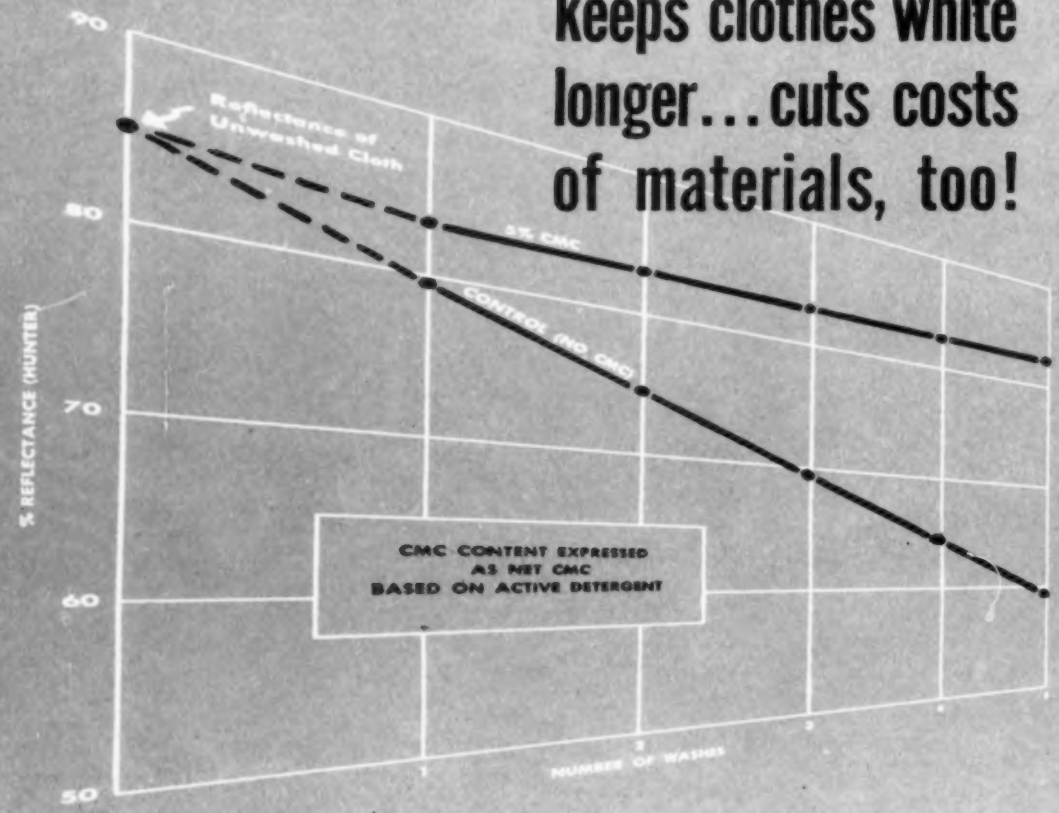
The introduction of a new waterless hand cleaner and a specially designed dispenser for the material for installation in shop, office or store were announced recently by KaLene Corp., 706 Portland Ave., Minneapolis. The new hand cleaner, "KaLene," in the form of a smooth cream, contains lanolin. It is said to remove tar, paint, grease, printing ink, etc. It is supplied in bulk in drums with a pump with plastic hose attached. Dispensers are refilled by attaching the hose with a quick-action connection, and pumping full from the bulk drum. A gauge at the top of the dispenser indicates the amount in it at all times.

The new dispenser operates by pressure on the plunger. It is sturdily built to stand abuse, and is nickel-plated. Because no water is required in cleaning the hands with "KaLene," the dispenser need not be placed in a wash room, but at any location convenient to workers.

Crude Technical CMC

HERCULES®

keeps clothes white longer...cuts costs of materials, too!



THIS chart proves that Hercules' "CT" grade of CMC, especially prepared for detergents, will do a better job for your laundry customers—*and at no extra cost to you!* This grade of CMC reduces the amount of active detergent needed and permits the generous addition of cheaper alkaline builders.

In this case, the 5% replacement of the active detergent content with "Hercules" CMC ("CT" grade) increases soil removal and whiteness retention properties almost 45% even after five washings. And this greater whiteness is increasingly noticeable with each washing. We will be glad to work with you in adapting CMC to your detergent needs. A purified grade of CMC (cellulose gum) is also available.

HERCULES POWDER COMPANY INCORPORATED 961 Market Street, Wilmington, Delaware

CM50-5

Olfaction TGA Scientific Section Topic

A SYMPOSIUM on olfaction was featured at the annual meeting of the scientific section of the Toilet Goods Association held December 6th at the Waldorf-Astoria Hotel, New York.

Edward Sagarin of Givaudan-Delawanna, Inc., New York, discussed the approach to a scientific method in the study of olfaction, stressing the lack of consistency among observers in olfaction, and the need for verification of results emanating from such tests. The present theories of olfaction were reviewed by James Middleton of Jacqueline Cochran Cosmetics, New York. Joseph H. Hersh, M.D., defined the mechanism of smell, and pointed out abnormalities of this sense. The practical application of studies in olfaction, olfactory measurement work, and the value of these studies to industry were considered by Bernice Wenzel, Barnard College, New York. Finally, the "Future Pathways of Olfactory Research" were defined by Dean Foster, Joseph Seagram Sons, Inc., New York, in a twelve point program calling for interscience group cooperation.

Other reports presented at the meeting included "The Pilot Plant—Equipment and Its Application in Drug and Cosmetic Development" by P. C. Wieseman, Norwich Pharmacal Co., Norwich, N. Y.; "Some Aspects of the Mechanical Behavior of Hair" by Walter J. Hamburger, Henry M. Morgan and Milton M. Platt, Fabric Research Laboratories, Boston; and "The Pharmaceutical Properties of the Kaolins" by A. Halpern, J. V. Powers, and C. H. Bradney, E. Fougera & Co., New York.

Ungerer Transfers Bennett

Ira Bennett, formerly special sales representative working out of the New York headquarters of Ungerer & Co., was recently transferred to the Chicago office. He is handling certain accounts in the Chicago, Illinois territory, as well as in the states of Ohio, Indiana and Michigan. Mr. Bennett replaces J. R. Martin, resigned, who formerly represented Ungerer in Chicago. Mr. Bennett joined Ungerer in 1947 as southern representative, working out of Asheville, N. C. A year ago he was transferred to New York. He is working in Chicago with E. M. Tisdale, who also represents Ungerer in that territory.

Houchin Phone Change

Houchin Machinery Co., Hawthorne, N. J., now has a new telephone number: HAwthorne 7-4800.

Anisic Aldehyde Tapers Off

Anisic aldehyde, also known as aubepine, basic aromatic chemical for new mown hay type odors for toilet soaps, shampoos, and the like, has had probably a greater increase in production since the beginning of 1948 than any other aromatic chemical. Output was reported to have increased almost 100 per cent in two years, but during the past six months, demand has tapered off sharply.

Although many thousands of pounds of anisic aldehyde go yearly into toilet soap perfumes, said the December issue of *D & O News*, published by Dodge & Olcott, Inc., New York, oldest American perfuming materials producer, its use as a base for anti-histamine drugs and synthetic hormones accounted chiefly for the large increase in demand in 1948 and 1949. Anisic aldehyde is produced from the anethole fraction of pine oil, the latter currently extremely scarce due to defense uses. A spokesman for D & O added that the decline in demand for this aldehyde probably reflected a marked down trend during 1950 in the sale of anti-histamines.

SOCMA Reelects Moody

Reelection of Sidney C. Moody of American Cyanamid Co., Bound Brook, N. J., as president of the Synthetic Organic Chemical Manufacturers Association took place at the annual meeting, Dec. 12, at the Commodore Hotel, New York. All other officers were reelected at the meeting, at which time Mr. Moody reviewed efforts of the Association to combat legislation unfavorable to the American chemical industry. It was also revealed that SOCMA will meet jointly with the Manufacturing Chemists Association, Washington, D. C., at White Sulphur Springs, W. Va., June 14-16.

Elected to the board of directors of SOCMA were Frederick Dehls, Benzol Products Co. and Mortimer M. Gruber of U. S. Industrial Chemicals, Inc., New York. Dr. Elvin H. Kilheffer, formerly of E. I. du Pont de Nemours & Co., Wilmington, and Dr. August Merz, formerly of Calco, and long active in SOCMA affairs, were elected honorary members of the board.

At the annual banquet, Gen. Robert L. Eichelberger, commander of the Eighth Army in the Pacific Theatre during World War II gave an off-the-record talk on world military and political conditions.

GEN. ROBERT L. EICHELBERGER

S. C. MOODY

DRYMET*

THE ECONOMICAL DETERGENT SILICATE

Cowles DRYMET, anhydrous sodium metasilicate, is the most highly concentrated form of sodium metasilicate available. It is more economical to use, on the basis of both Na_2O (alkalinity) and SiO_2 (silicate) than any other type of hydrated or anhydrous detergent silicate, either compounded or by itself. DRYMET contains no water of crystallization.

DRYSEQ*

THE ALL-PURPOSE DETERGENT SILICATE

Cowles DRYSEQ, anhydrous sodium sesquisilicate, is a medium pH alkaline cleaner which will do fast, dependable work at a low cost to the user. It is a white, free-flowing powder, quickly and completely soluble in hot or cold water—containing 56.75% Na_2O—making it an economical base material for compounding.

DRYORTH*

THE HEAVY-DUTY DETERGENT SILICATE

Cowles DRYORTH, anhydrous sodium orthosilicate, is a powerful, speedy, heavy-duty cleaner with valuable penetrating and wetting-out properties, reinforced dirt-removing power and unusual emulsifying action. It is an anhydrous, free-flowing powdered silicate containing not less than 60% Na_2O, which may also be used as an economical constituent of high pH cleaning compounds.

CRYSTAMET*

THE MEDIUM pH DETERGENT SILICATE

Cowles CRYSTAMET is a pure, perfectly white, free-flowing granular pentahydrate sodium metasilicate with the normal 42% water of crystallization. Suggested for compounding when it is desirable to lower the concentration of a finished product. Readily soluble—chemically stable—easy to handle. Can be used on medium pH jobs.

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HEAVY CHEMICAL DEPARTMENT • CLEVELAND 3, OHIO

Alters Detergent Claims

Sunco Products Co., Brooklyn, has agreed to stop representing that its detergent preparations have been approved by the United States Navy and have been specified for use on Navy ships, according to a recent release of the Federal Trade Commission, Washington, D. C. The firm has entered into a stipulation with the F.T.C. to this effect.

French Honor Fontanes

Sylvain Fontanes, managing director of Givaudan & Co., Paris, France, was nominated recently as Chevalier of the Order of the Legion d'Honneur in recognition of half a century of achievement on behalf of French perfumery.

Shears Lever Premium

The newest merchandising premium of Lever Brothers Co., New York, is a durable, multiple-use kitchen shears, available for 50 cents plus two wrappers or box tops from "Lux" toilet soap or flakes, "Rinso," "Silver Dust," "Lifebuoy," or "No-Rinse Surf." The premium is being offered during January, and the "February Star Value Sale" of soap products. During these months it will be mentioned on the Arthur Godfrey, Big Town and Lux Radio Theatre shows. It will also be advertised in a full page in *Life* magazine on Feb. 5. Point-of-sale posters are also being supplied to support the promotion.

P&G Earnings Rise

A net profit of $20,141,005, equal to $2.09 a common share, was reported for the quarter ended Sept. 30, 1950 by Procter & Gamble Co., Cincinnati. Earnings in the comparable 1949 quarter were $19,737,322, or $2.05 a common share. Share earnings for 1949 are adjusted to give effect to a common stock split in March, 1950.

In making his report to stockholders, Richard R. Deupree, chairman, urged a "moderate manufacturers' sales tax" as an alternative to an excess profits tax as a means of raising revenue for increased Federal expenditures. The manufacturers' sales tax would yield more revenue and would be better for the economy of the country, Mr. Deupree stated.

Ralph A. Olson, Chicago branch manager of S. B. Penick & Co., New York, recently was elected president of the Chicago Drug & Chemical Association at the organization's luncheon at the Palmer House, Chicago. Mr. Olson, who has served the Association in various capacities for several years, succeeds Walter R. Nay, who will serve ex-officio as a member of the board of directors for 1951. Other officers elected were Stanley M. Lind, vice-president; Vince Farrar, secretary; T. J. Callahan, treasurer. The following were appointed directors, each to serve two years: Roger M. Baker, J. C. Browning, Thomas F. Glynn, G. H. Reinier, and George H. Stanton.

Handles Dog Shampoo

Imperial Distributing Co., New York, was appointed recently as sole distributor for "Pooch," a new shampoo for dogs made by Sage Manufacturing Co., Paterson, N. J.

Lueders Honors Olson

Ola Olson was recently received into the Veterans' Organization of George Lueders & Co., New York, as the 46th member. At a luncheon held in his honor at the Drug & Chemical Club, New York, Mr. Olson, who is a member of the firm's traffic department, was given the customary gold pin and gifts from the company.

Prefer Washing Machines

First preference among readers of *Household* magazine, published by Capper Publications, Inc., Topeka, Kans., as to the major item for the home they would like to buy next is a washing machine, according to a recently issued study. Copies of the survey, "Readers Family Style" are available from Victor Hawkins, director of research, Capper Publications, Inc., 912 Kansas Ave., Topeka.

Hooker Advances Two

John S. Coey, since 1943 manager of sales development, was recently named eastern sales manager of Hooker Electrochemical Co., Niagara Falls, N. Y. At the same time it was announced that Thomas H. Trimble, formerly eastern sales supervisor has been made assistant manager, Niagara sales office.

'49 Surfactant Output Off

Production of synthetic organic chemicals in 1949 was lower than in the previous year, according to figures released recently in the annual report of the United States Tariff Commission, Washington, D. C. The section of the report dealing with surface active agents (synthetic organic detergents, wetting agents, and emulsifying and dispersing agents) shows that in 1949 U. S. production amounted to 430 million pounds. This was 14.7 per cent more than in the previous year, when 375 million pounds were reported produced. Sales in 1949 were given as 339 million pounds, valued at $84,000,000, as compared with 275 million pounds, worth $88,000,000 in 1948.

Combined production in 1949 of sulfated and sulfonated (anion-active) surface active agents, cyclic and acyclic combined, totaled 381 million pounds, or almost 90 per cent of the total output of all surface active agents as a group. Sales of sulfonated and sulfated products totaled 295 million pounds, valued at $66,000,000.

In volume of production, the principal items in the cyclic group were the alkyl benzenoid compounds, including alkyl aryl sulfonates (147 million pounds); aliphatic and aromatic petroleum sulfonates (67 million); and oils, fats and waxes (41 million).

Production in 1949 of all polyhydric alcohol ethers and esters (generally nonionic materials) totaled 30 million pounds; sales totaled 27 million pounds, valued at 11 million dollars. Production of non-sulfonated nitrogen-containing compounds (chiefly cation-active materials) totaled 18 million pounds; sales amounted to 15 million pounds, valued at 6.4 million dollars.

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Sperm Oil
Oleo Stearine
Lard Oil
Neatsfoot Oil
Grease
Tallow
Lanolin

FATTY ACIDS

Red Oil
Tall Oil
Stearic Acid
Hydrogenated Fatty Acid
Cottonseed and Soybean Fatty Acids
Tallow

ALKALIES

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Soda Ash, Light and Dense
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SILICATE OF SODA—Liquid powdered and solid.

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MAYPONS—Unique surface active agents; prolific foam; high detergency and emulsifying powders; suitable for cosmetic and industrial use.

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H. Kranich, Jr., Marries

Herbert Kranich, Jr., son of the founder and president of Kranich Soap Co., Brooklyn, was married recently to Miss Florence Leslie, daughter of Timothy Nutting Holden. Mr. Kranich is associated with his father in Kranich Soap Co.

Ban Glycerine Hoarding

Crude and refined glycerine, benzene, carbon tetrachloride, ortho-, meta- and paradichlorobenzene and trichloroethylene are among 55 items which the National Production Authority recently designated as scarce and excessive accumulation of which is banned. The order, which is designated Notice No. 1, under severe penalties bans the accumulation of products (a) in excess of reasonable demand for business, personal and home consumption and (b) for the purpose of resale at prices in excess of prevailing market prices where such materials have been designated "scarce materials."

Named by Gen. Chemical

Mark M. Biddison, a vice-president since 1947 and general manager of the division, was recently elected executive vice-president of the General Chemical Division of Allied Chemical and Dye Corp., New York. A member of the General Chemical organization for 33 years, Mr. Biddison began his career with the company in the sales department.

Deny New Soap Trial Plea

A move for a new trial was denied the three soap companies charged with unlawful price discrimination by the Federal Trade Commission recently. The request was based on the fact that one of the trial examiners who had begun the hearings was retired before the cases had been completed.

The denial came in the form of a reversal of an earlier opinion favoring the new trial. Newly sworn in Commissioner Stephen J. Spingarn reversed a recommendation for a new trial by Earl J. Kolb, who had ruled the companies were entitled to a new hearing when he was appointed to succeed Examiner Randolph Preston.

The three companies: Colgate-Palmolive-Peet Co., Jersey City, N. J.; Procter & Gamble Co., Cincinnati, and Lever Brothers Co., New York, are charged by the Federal Trade Commission with violations of the Clayton and Robinson-Patman Acts through having rebated sums to certain large purchasers in discrimination against smaller ones.

Bates AOCS Referee Chmn.

R. W. Bates of Armour & Co., Chicago, was recently named chairman of the referee examining board of the American Oil Chemists Society, succeeding Dr. A. S. Richardson of Procter & Gamble Co., Cincinnati.

Bush Succeeds Behr

The resignation of Dr. Arthur A. Behr, director of aromatics research for Dow Chemical Co., Midland, Mich., effective Jan. 1, last, was announced recently. Dr. Behr, who resigned in order to devote more time to personal business affairs, held the post for 10 years with Dow. More recently he was manager of the Bush Aromatics Division of Dow. In this connection he is succeeded by B. T. Bush, who has been associated with the Bush Division since its inception.

The Bush sales office was recently moved to 629 Grove Street, Jersey City, from 136 Liberty St., New York.

New C-P-P Premiums

Pinking shears and a pendant with chain are being offered as premiums by Colgate-Palmolive-Peet Co., Jersey City, N. J., on some of its soap and synthetic detergent products. The shears, which are self-sharpening with ground steel blades and satin finish aluminum handles, are available for $1 plus a box top from a package of "Fab" or wrappers from three cakes of "Cashmere Bouquet Soap."

The pendant premium, "Captive Rose," a transparent square with a small hand carved rose underneath the sparkling surface, may be obtained for 50 cents plus a box top from a package of "Super Suds," "Vel" or three cakes of "Palmolive."

Frank Z. Woods Dies

Frank Zina Woods, long a manufacturers' representative in the drug and chemical trade and president of Lanchere, Inc., Chicago, died Dec. 4, after a long illness at his home.

"G-11" Licenses Available

The availability of licenses to manufacture germicidal soaps covered by U. S. Patent No. 2,535,077 was announced late last month by Sindar Corp., New York. The patent was issued to the firm, which is affiliated with Givaudan-Delawanna, Inc., New York, on Dec. 26, 1950. Licensing arrangements at what are described as "reasonable" royalty rates may be worked out, the announcement states. The patent, issued to Drs. Eric C. Kunz, Givaudan president and William S. Gump of Givaudan-Delawanna, Inc., covers the inclusion of hexachlorophene in soap. Hexachlorophene is a generic name for 2,2′-dihydroxy-3,5,6,3′,5′,6′ hexachloro diphenyl methane, the registered trade name for which is Sindar's "G-11."

Florasynth Syntomatic Join

The affiliation of Syntomatic Corp. and Florasynth Laboratories, Inc., both New York, was made in a joint statement issued recently by William Lakritz, Florasynth president and Dr. Victor G. Fourman, president of Syntomatic.

The increase in sales of the flavor division of Syntomatic Corp. necessitating the expansion of research and production facilities led to the decision of the firm to affiliate with Florasynth.

Florasynth will continue to maintain its operations without change. Syntomatic will continue its New York headquarters and maintain its perfume oil research laboratories and branch offices in Chicago, Philadelphia and Mexico City. Dr. Fourman is to direct perfume research for both firms, while production and flavor research is under the supervision of David E. Lakritz, chief chemist of Florasynth.

Irving Bennett continues as vice-president and director in charge of sales for Syntomatic Corp.

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RAW MATERIAL MARKETS

As of January 5, 1951

IN the period of over a month since this report last appeared prices of almost all raw materials have advanced sharply. Fats and oils have reacted bullishly to the bad news from Korea dating back to early December. The declaration of a state of emergency by the President, the possibility of controls such as were imposed during World War II and the threat of reduced imports of oils and oilseeds from the Far East are reflected in current price levels. Soap prices have been advanced as a result of higher raw material costs.

Tallow gained ½ cent a pound yesterday and is now quoted at 17 cents, substantially higher than the 14 cents it was bringing late in November. At its present price it is nearly three times more than it was selling for early in January of 1950.

The traditional gap between coconut oil and tallow has now been reduced to one cent, the smallest it has been since price controls were in force back in 1945. Coconut oil currently is listed at 18 cents for the crude, on the Pacific Coast. The present price represents an advance of ¾ cents a pound since late in November. At that time copra was reported at $222.50 a ton on the Pacific Coast, a price that was recently advanced to $235.00. The current price moved up $5 on January 4.

Other oils, prices of which have risen in recent days, include crude corn oil at 22¾ cents currently, up from 21½ cents as reported in this space in December; cottonseed, now bringing 22¼ cents a pound for the crude, is higher than the 21⅜ cents figure of late November; peanut oil at 23 cents is higher by ½ cent than it was when last reported here, while crude soybean oil is selling currently for 19⅞ cents a pound, as against 18¼ cents a little over a month ago.

Lard is markedly higher than it was six weeks ago. The present price is 18¼ cents, as compared with the earlier quotation of 14.77 cents.

Other developments concerning fats and oils during the past month include a recent announcement by the U. S. Department of Agriculture that while production of fats and oils during 1950-51 will be large, it will be under last year's output. The possibility of fats and oils export controls in the immediate future is unlikely, according to a recent announcement of the U. S. Department of Commerce, which goes on to point out that the situation could change. If controls come, the Department states, they would be aimed at forbidding reexport of some of the strategic foreign oils, or to prevent the shipment of important fats and oils to countries in the Soviet Russian orbit.

Shortened supplies, expanded consumption, plus stockpiling, are expected to keep prices of oils and fats at high levels during the coming year.

One part of the oil picture that is causing anxiety is the Philippine supply of copra and coconut oil. Should anything curtail our supply of coconut oil and copra from this source, the whole fat and oil picture, for the soap industry at least, would be affected seriously. Although we are receiving "ample" supplies from the Islands now, our imports are from 10 to 15 per cent under prewar. Western European countries are taking more than formerly.

Of more sentimental than practical interest, since olive oil foots use in soap has dropped off so sharply in recent years, is the fact that the 1950 production of olive oil from Spain, Italy and Greece was 40 per cent under the previous year. In Portugal, too, production was less than half of the 1949 figure in 1950.

Further increases in the price of glycerine were reportedly made by two refiners during the past few weeks. The advances of three cents a pound bring the price of the crude to a range of 50 to 58 cents, with the refined BP 98 per cent listed at from 55½ to 60 cents a pound.

A new price list showing higher prices on oleic acids, stearic and palmitic acids, hydrogenated fatty acids and glycerides and special fatty acids was issued recently by one large producer.

A shortage of carnauba wax is predicted, according to recent word from Brazil. The country has no appreciable reserve stocks of carnauba, it has been noted by an agronomist for the Brazilian Ministry of Agriculture, following a recent field survey. Exports in 1950 were larger than in 1949, as a result of barter trade in the first part of the year, the report notes. Increased sales, plus the barter trade, practically eliminated all the reserve stock of 3,000 tons of carnauba.

Price increases during the past few days also have been recorded on oil of lemongrass, both native and rectified oil of cananga, dill, cedarleaf and mint oils. Oil of bergamot, which hit a new high, and sandalwood and eucalyptus oils also advanced.

Affected by the general increase in prices are four grades of gum shellac: superfine, TN, Button No. 1 and Lemon No. 1, all of which rose from nine to 11 cents a pound in the last day or two.

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This new odor-reduced "Special Improved Stearic Acid" is of importance to manufacturers of fine cosmetics, food emulsifiers, soaps, stearates and other products demanding the highest fatty acid content possible.

A. Gross' Stearic Acids follow the natural balance of Palmitic Acid and Stearic Acid as found in tallow. The importance of the Palmitic Acid content (55%) of natural Stearic Acid, whether for the production of quality face creams or durable buffing compounds, cannot be discounted.

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Titre °F	130.1° — 131.0°	129.0° — 129.7°
Color 5¼" Lovibond Red	0.1 — 0.5	0.5 — 1.0
Color 5¼" Lovibond Yellow	1.0 — 2.0	2.0 — 3.0
Saponification Value	207 — 210	207 — 210
Acid Value	206 — 209	206 — 209
Iodine Value	3.5 — 4.5	5.5 — 7.0

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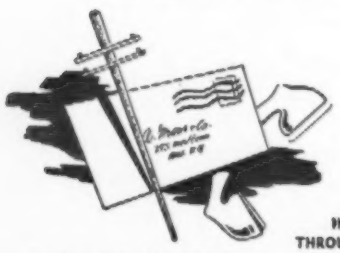

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BIDS AND AWARDS

Misc. FSS Awards

The following awards were announced in connection with recent openings for miscellaneous supplies by the Federal Supply Service, Washington, D. C.: insecticide, Airosol Co., Neodesha, Kans., 54.5 cents; furniture polish, Penetone Co., Tenafly, N. J., 15.6 cents; soap, Armour & Co., Chicago, item 51-S-1430, 12.5 cents, 1655, eight cents, Imperial Products Co., Philadelphia, item 51-P-2585, 7.6 cents; naphthalene, Reliable Chemical Co., Passaic, N. J., item 51-N-100, 14.5 cents, 115, 14.5 cents.

P.O. Grit Soap Bids

Bids on an unspecified quantity of cake grit soap in a recent opening for miscellaneous supplies by the Post Office Department, Washington, D. C., were received from: Unity Sanitary Supply Co., New York, 12 cents a pound; Day & Frick Co., Philadelphia, 6.1 cents; M. Schneider & Sons, Brooklyn, 6.5 cents.

Cleaning Comp. Bids

In a recent opening for miscellaneous supplies by the Wright-Patterson, Air Material Command, Dayton, O., the following bids were received on 340,600 pounds of cleaning compound: Western Chemical & Mfg. Co., Los Angeles, 7.87 cents for 76,200 pounds: Wyandotte Chemicals Corp., Wyandotte, Mich., 6.25 cents for 340,584 pounds in 276 pound barrels; Magnus Chemical Co., Garwood, N. J., 8.42 cents; Yosemite Chemical Co., San Francisco, eight cents for 25,400 pounds for AF901, AF903 and AF911; Frederick Gunn Chemical Corp., Kearny, N. J., 10 cents for 25,400 pounds in 400 pound steel drums; Optimus Detergents Co., Matawan, N. J., 7.1 cents, limited to 100,000 pounds; Spazier Soap & Chemical Co., Santa Monica, Calif., 13.5 cents; Turco Products, Inc., Los Angeles, 7.22 cents for 340,600 pounds, fob Joliet, Ill., 7.36 cents for 340,600, fob Newark, N. J., 7.46 cents for 340,600 pounds, fob Los Angeles, 7.61 cents for 340,600 pounds, fob Houston; Klem Chemicals, Inc., Dearborn, Mich., 9.26 cents for 68,600 pounds.

Misc. FSS Awards

Awards on miscellaneous supplies in recent openings by the Federal Supply Service, Washington, D. C., have gone to the following: borax compound soap, Mione Manufacturing Co., Collingdale, Pa., item 51-S-1855-80, 11.98 cents; shoe polish, Virginia Specialty Corp., Lynchburg, item 51-P, 4.8 cents, 1170, 4.8 cents; disinfectant, Trio Chemical Works, Brooklyn, item 51-S-395-10, 58.6 cents, 395-15, 48.5 cents, 395-55, 43.9 cents.

Dishwashing Comp. Bids

Bids on an unspecified quantity of compound for use in mechanical dishwashing machines in a recent opening for miscellaneous supplies by the Federal Supply Service, Washington, D. C., were received from the following: Kelite Products, Mineola, N. Y., 11.75 cents; Nocon Products Corp., New York, 16 cents; Economics Laboratory, Inc., St. Paul, Minn., 8.875 cents; Industrial Soap Co., St. Louis, 14 cents.

FSS Insecticide Bids

In a recent opening for miscellaneous supplies by the Federal Supply Service, Washington, D. C., the following bids were received on an unspecified quantity of insecticide for East Point, Ga.: Chemical Insecticide Corp., Brooklyn, items 1, 2, 3 and 4, 66c, 65c, 45c and $1.62; Crystal Soap & Chemical Co., Philadelphia, item 4, $2.75; Atlantic Chemicals, Inc., item 1, 68c; Crafton Chemical Co., Richmond, Va., item 4, $2.20; Rose Exterminator Co., San Francisco, items 1, 2, 70c, 3, 50c; Theodore Meyer Estate, Philadelphia, item 4, $2.75; Pitt Chemical & Supply Co., Pittsburgh, items 1, 2, 75c, 3, 70c, 4, $1.50; Capitol Chemical Co., Washington, D. C., item 4, $2.25; Octagon Process, Brooklyn, items 1, 2, 78c and 81c; Cole Laboratories, Inc., Long Island City, N. Y., item 1, 68c, 2, 67c, 3, 39.8c.

Soap Award to Stevens

Stevens Soap Corp., Brooklyn, received the award on an unspecified quantity of soap powder in a recent opening for miscellaneous supplies by the Panama Canal, Washington, D. C. The award was made on the basis of a bid of $4,800.

Survey Seeks More Benzene

A survey to determine the demand for benzene over the next five years was initiated at a meeting of an industry committee, Dec. 14, following a conference with officials of the National Production Authority. The aim of the survey is to establish what added facilities are needed for benzene, demand for which has outstripped production. Expansion of the supply of benzene from petroleum rather than from coal hydrogenation processes is the immediate objective. Improvement of recovery processes at coke ovens, and an investigation into the European export situation on benzene were also recommended.

I. J. Stanley Dies

I. J. Stanley, Jr., 54, manager of heavy chemicals sales for Monsanto Chemical Company's organic division since 1934, died Dec. 12 at Charleston General Hospital, Charleston, W. Va. He had been ill for several months.

Chi. Cos. Chems. Elect

William H. Lieb of Allen B. Wrisley Co., Chicago, was recently elected treasurer of the Society of Cosmetic Chemists, Chicago, at the annual meeting. Other officers elected at the meeting include: Gene L. Rose, G. Barr & Co., chairman; George S. Kolar, Kolar Laboratories, Inc., vice-chairman; Dr. Kathryn Graham, Sears, Roebuck and Co., secretary. Herman J. White of Swift and Co., was appointed program chairman, and Gustav Carsch, Polak & Schwarz, Inc., publicity chairman.

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NEW TRADE MARKS

THE following trade-marks were published in the November-December issues of the *Official Gazette* of the United States Patent Office in compliance with Section 6 of the Act of February 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, a fee of ten dollars must accompany each notice of opposition.

Luxury — This for liquid wax compounds for polishing and cleansing surfaces of wood, porcelain, etc. Filed Dec. 4, 1946 by Luxury Products Co., Burlington, Ia. Claims use since July 2, 1946.

"Totem"—This for toilet soaps. Filed Jan. 19, 1946 by Les Parfums de Dana, Inc., New York. Claims use since Dec. 31, 1945.

"Twenty Carats" — This for toilet soaps. Filed Jan. 19, 1946 by Les Parfums de Dana, Inc., New York. Claims use since Dec. 31, 1945.

The following trade marks are published in compliance with section 13 (a) of the Trade Mark Act of 1946. Notice of opposition must be filed within 30 days of publication and a fee of $25 must accompany each notice of opposition.

Colorfresh—This for wax emulsion for coating produce and other edibles. Filed June 10, 1949 by S. C. Johnson & Son, Inc., Racine, Wis. Claims use since Mar. 4, 1949.

Gof-Kloth—This for chemically treated cloths for use on lenses to prevent fogging. Filed Aug. 19, 1948 by Bay State Optical Co., Attleboro, Mass. Claims use since July 26, 1948.

Lustress — This for shampoo. Filed Feb. 11, 1948 by Kay Daumit, Inc., Jersey City, N. J. Claims use since Aug. 19, 1947.

Brexcene—This for hair shampoo cream. Filed Sept. 4, 1948 by John H. Breck, Inc., Springfield, Mass. Claims use since July 1, 1948.

Cowbomb — This for insecticides. Filed Feb. 28, 1949 by Innis, Speiden & Co., New York. Claims use since Sept. 10, 1948.

Timsen—This for preparation for use as a germicide, disinfectant, etc. Filed Mar. 23, 1949 by Theo. Ross Associates, Los Angeles. Claims use since Oct. 15, 1947.

Spartec — This for germicidal composition for domestic and industrial use. Filed Jan. 26, 1950 by Wyandotte Chemicals Corp., Wyandotte, Mich. Claims use since Jan. 10, 1950.

Karathane — This for insecticides. Filed Feb. 2, 1950 by Rohm & Haas Co., Philadelphia. Claims use since Jan. 30, 1950.

Ad-It — This for mildewproofing agent. Filed Feb. 4, 1950 by Nuodex Products Co., Elizabeth, N. J. Claims use since Jan. 23, 1950.

Deocide — This for deodorant. Filed July 5, 1950 by Lien Chemical Co., Franklin Park, Ill. Claims use since Aug. 1, 1938.

Wilsolve—This for solvents for use in cleaning floors, furniture, etc. Filed Sept. 10, 1949 by Wilsolve Corp., Baltimore. Claims use since May 1, 1948.

Cyclops — This for wax cleaner and polish for varnish, enamel and lacquer surfaces. Filed Aug. 6, 1948 by Cyclops Manufacturing Co., Detroit. Claims use since June 3, 1939.

Ozicote—This for coating and cleaning spray material for glass surfaces. Filed Nov. 23, 1949 by Woodlets, Inc., Portland, Pa. Claims use since Nov. 17, 1949.

Katz — This for tincture of green soap. Filed Dec. 8, 1948 by Katz Drug Co., Kansas City, Mo. Claims use since Sept. 5, 1928.

Carload Filler — This for pyrethrum extract. Filed Jan. 27, 1949 by Carl F. Miller & Co., Seattle. Claims use since May, 1927.

Sterlon — This for bactericides, germicides and disinfectants. Filed Apr. 18, 1949 by Monsanto Chemical Co., St. Louis. Claims use since Mar. 9, 1949.

Metazene — This for synthetic organic chemical compound with an inert organic solvent for use as a deodorant in confined spaces. Filed Dec. 21, 1949 by Kilgore Chemicals, Inc., Washington, D. C. Claims use since Dec., 1947.

Air-E-Fill — This for liquid deodorant for house and industrial use. Filed Jan. 3, 1950 by Kemcal, Inc., San Francisco. Claims use since Dec. 23, 1949.

Sweeney's — This for rat and mouse poison. Filed Feb. 8, 1950 by W. R. Sweeney, Mfr., Salisbury, Mo. Claims use since 1904.

Katz—This for bed bug poison. Filed Dec. 8, 1948 by Katz Drug Co., Kansas City, Mo. Claims use since Sept. 5, 1928.

Cremotres — This for antibacterial preparation. Filed Jan. 4, 1950 by Sharp & Dohme, Inc., Philadelphia. Claim use since Nov. 21, 1949.

Kep — This for compound for cleaning teeth. Filed Aug. 11, 1949 by Kep Co., Houston, Tex. Claims use since May 12, 1949.

Rise — This for fluid product for use in shaving. Filed Sept. 17, 1949 by Carter Products, Inc., New York. Claims use since Sept. 14, 1949.

Rolls Razor — This for shaving soap. Filed Jan. 18, 1950 by Rolls Razor, Inc., New York. Claims use since June 1, 1928.

Brown Bear — This for soap used primarily in dishwashing. Filed June 3, 1948 by Cudahy Packing Co., Chicago. Claims use since Feb. 15, 1927.

So-N-So — This for cleaning preparations. Filed June 1, 1950 by Sona Products Corp., Chicago. Claims use since Feb. 24, 1950.

Treadwear — This for wax in liquid form for polishing floors. Filed June 3, 1948 by Cudahy Packing Co., Chicago. Claims use since Nov. 3, 1933.

Sil-i-kleen — This for metal polishes and floor polishes. Filed Aug. 4, 1949 by Waxed Silicone Products, Inc., Miami, Fla. Claims use since Oct. 1, 1948.

Spraylet — This for filled germicide and insecticide dispensers in the nature of non-mechanical pressure type canisters. Filed May 2, 1949 by Knapp-Monarch Co., St. Louis. Claims use since January, 1949.

Dura Life — This for liquid wood preserver for prevention of wood rot, fungus growths, and prevention of termites. Filed July 25, 1949 by Dura-Life Co., Fort Worth, Tex. Claims use since July 15, 1949.

Fanomatic — This for deodorants in solid and liquid form for deodorizing rooms. Filed Feb. 23, 1950 by Monarch Laboratories, Chicago. Claims use since Jan., 1950.

West — This for soap dispensers. Filed Nov. 25, 1949 by West Disinfecting Co., Long Island City, N. Y. Claims use since June 9, 1926.

Franklin's Twenty-one — This for floor wax. Filed July 22, 1948 by Franklin Research Co., Philadelphia. Claims use since Nov. 7, 1945.

King Klenzer — This for preparation for general cleaning. Filed Oct. 27, 1948 by Arwell, Inc., Waukegan, Ill. Claims use since July 1, 1927.

Sterado — This for chemical, germicidal cleaner. Filed Jan. 5, 1950 by Griffith Laboratories, Inc., Chicago. Claims use since June 13, 1949.

Nymf-Air — This for facial soap. Filed Jan. 25, 1950 by Adolfo N. Castro, New York. Claims use since Sept. 8, 1949.

White House Quick Suds—This for powdered soap. Filed Feb. 1, 1950 by Iowa Soap Co., Burlington, Ia. Claims use since 1931.

6 MACHINES IMPORTANT IN—

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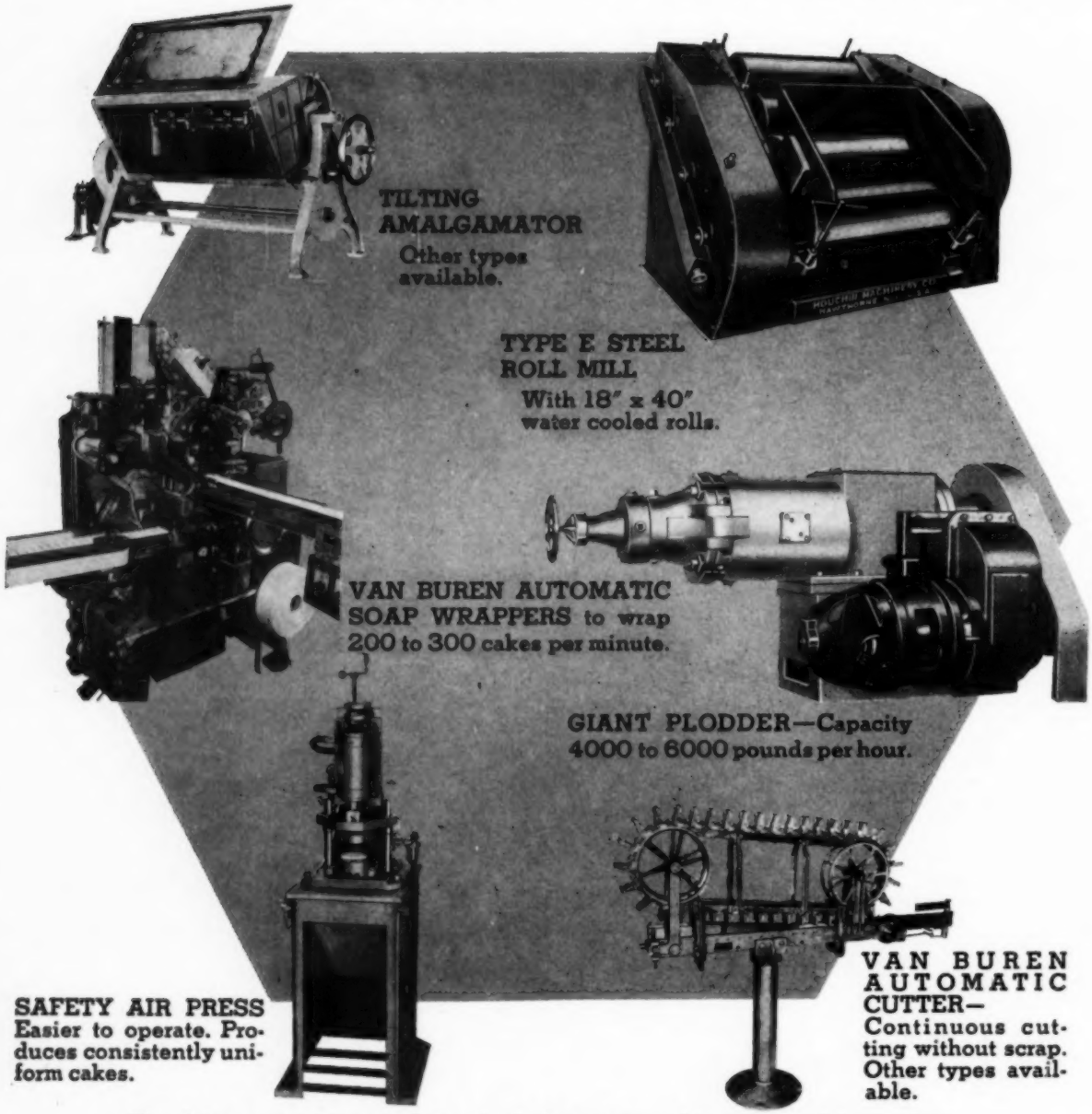

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PRODUCTION SECTION

Evaluating Hair Shampoos

WHILE the evaluation of detergents on cotton has had a tremendous amount of study in the past ten years, the cleansing action of shampoos has received relatively little study and the problem, in many respects, is more complicated than the problem of cotton detergents.

In any test or study of shampoos the question of precision and accuracy arises, namely the precision of the study itself, the reproducibility of results, and the accuracy of the test method as a means of evaluating shampoos. Work in this field has shown that it is possible to set up what appears to be a method of good precision with excellent reproducibility and effectiveness. However, with this test many commercial shampoos appear to be no more effective than water.

As a result, it might be concluded that many of the successful and popular shampoos are relatively ineffective as cleansing and scouring agents. It would appear further that in a shampoo the primary requisite is the imparting of a lustrous soft finish to the hair, rather than efficient cleansing. Further consideration of commercial shampoos suggests that the "ideal" product leaves more "deposit" on the hair after shampooing than before washing. Actually, a good shampoo should remove the dirt and grease from the hair and leave as a residue a conditioning oil which makes combing easier and imparts a lustre and highlights.

Studies of the scouring of greasy sheep's wool indicate that there exists a close resemblance to the shampooing of the hair. The composition of wool grease is similar to the grease and sweat on human hair.

Alexander Smith & Sons Carpet Co., Yonkers, recently have developed a method of spinning "wool in the grease," by which is produced a wool yarn with a wool grease content of six to 10 percent. By using weighted skeins of this greasy wool yarn, it is possible to study the effectiveness of synthetic detergents, soaps and shampoos under conditions that approximate closely actual use conditions in shampooing the hair.

The technique involves the use of wool yarn in the grease with known wool fat content. An accurately weighed sample is scoured gently in a definite concentration of shampoo or detergent in a known volume of water for an exact time under standard conditions. The scoured wool is squeezed dry and rinsed twice in a fixed volume of tap water for a given time, then dried, and finally extracted with petroleum ether. The difference between the previously determined grease content of the raw wool and the percentage left after the shampoo scouring is a measure of the relative detergent action of the particular shampoo or chemical compound.

Evaluation of Surfactants

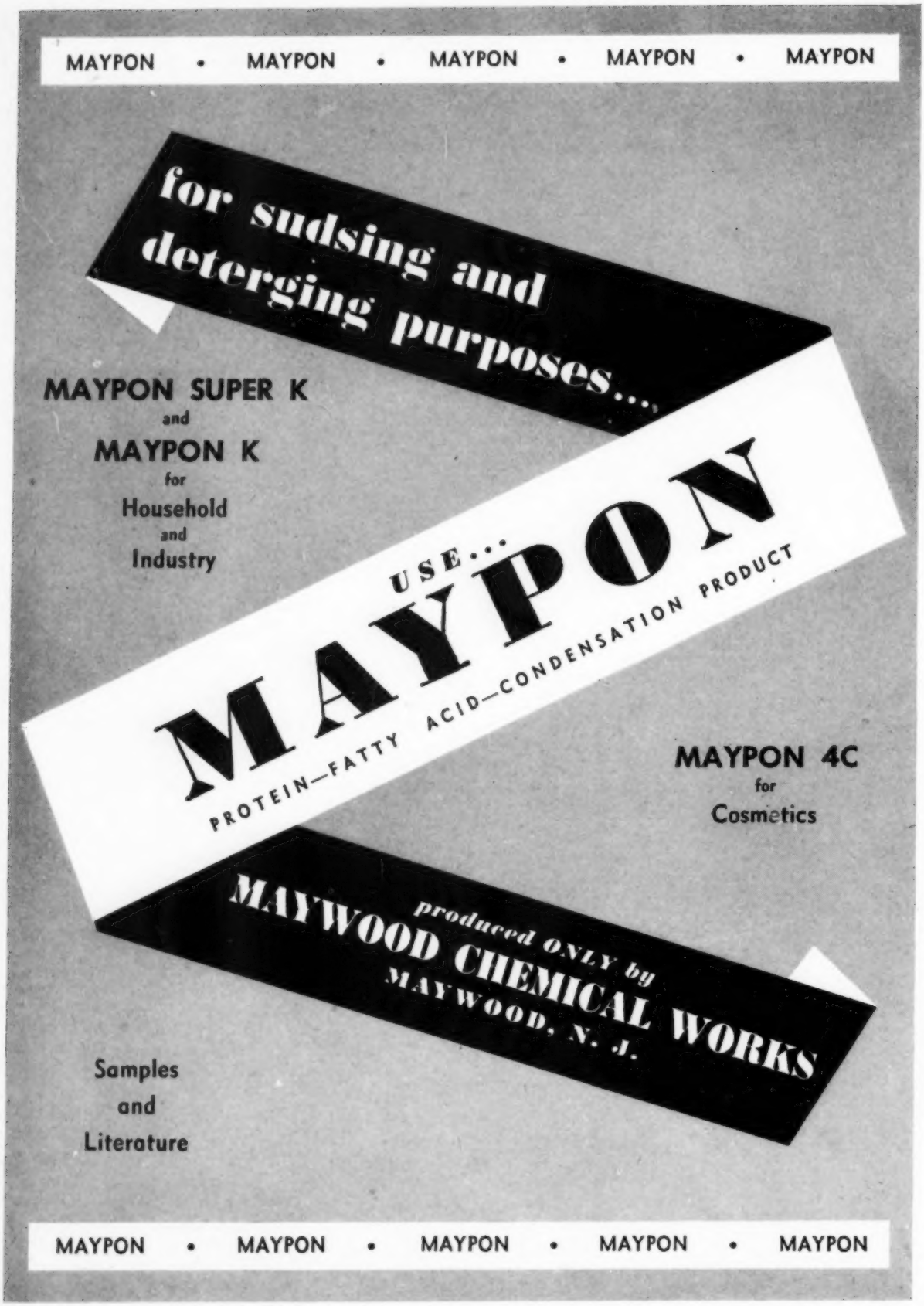
A TOTAL of 43 compounds selected from detergents, wetting agents, emulsifiers and solubilizers of the anionic, non-ionic, and cationic types, were studied for their relative detergent efficiencies in removing grease from raw wool yarn. In each case .5 grams of compound was used, calculated on a 100 per cent basis, in a volume of 200 ml (giving a .25 per cent solution) using the same scouring and rinsing procedure in all determinations.

The alkyl sulfates were the most effective detergents; fatty acid soaps were generally lower in the scale; a wetting agent was 10 per cent less effective than soap; one non-ionic gave only 50 per cent grease removal, while another was one of the most effective detergents; a branched-chain alkyl sulfate removed only one-quarter of the grease. With only 200 ml. of water and no detergent, 17 per cent of the grease is removed, presumably inorganic salts. Last in the grease removal scale were four cationic agents, all of which gave negative results, indicating definite adsorption of cationic ions by the wool. After scouring and extracting the cationic treated skeins, more material was obtained than is theoretically possible based on grease content.

Graph I shows five detergents plotted as per cent grease removal versus per cent of detergent. The steepest slopes are obtained for the alkyl sulfate and alkyl phenol non-ionic compounds, while an alkyl aryl sulfonate and protein-fatty acid condensate show a more gradual rise in grease removal.

In Graph II, two curves are plotted for an alkyl sulfate; the upper for a four minute scour, and the lower for a one minute scour. The effect of scouring time in grease removal is as expected with slightly more removed at four minutes than at one minute.

A total of 23 commercial shampoos were evaluated for grease removal using one gram of product (as is) in 200 ml. of water (0.5 per cent concentration). These shampoos are classified on the basis of


MAYPON • MAYPON • MAYPON • MAYPON • MAYPON
for sudsing and detergent purposes...
MAYPON SUPER K
and
MAYPON K
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Household
and
Industry
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MAYPON 4C
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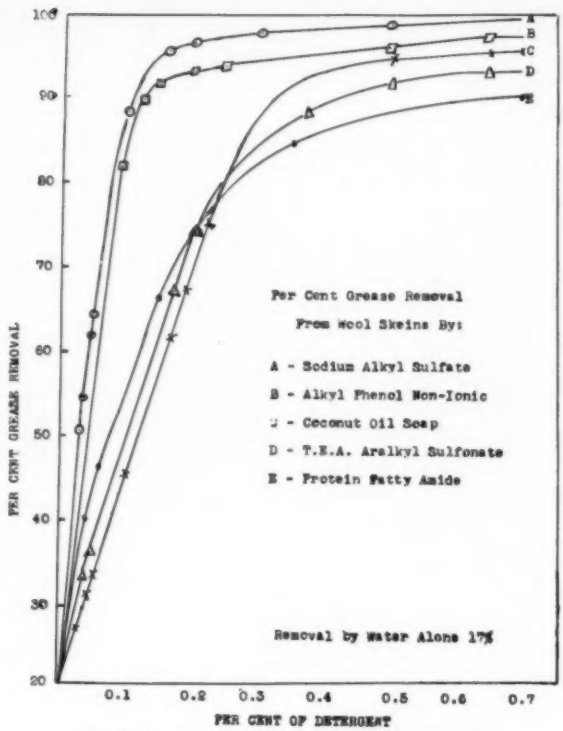
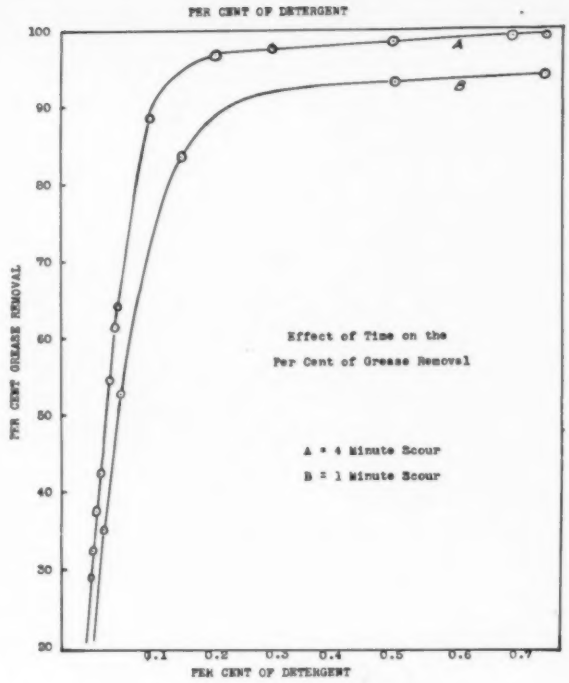

PER CENT GREASE REMOVAL
PER CENT OF DETERGENT
Per Cent Grease Removal
From Wool Skeins By:
A - Sodium Alkyl Sulfate
B - Alkyl Phenol Non-Ionic
C - Coconut Oil Soap
D - T.E.A. Aralkyl Sulfonate
E - Protein Fatty Amide
Removal by Water Alone 17%

Graph I. Plotted as per cent grease removal versus per cent of detergent for five detergents.


PER CENT OF DETERGENT
PER CENT GREASE REMOVAL
Effect of Time on the
Per Cent of Grease Removal
A = 4 Minute Scour
B = 1 Minute Scour
PER CENT OF DETERGENT

Graph II. Two curves plotted for an alkyl sulfate.

the active cleansing agent present, as soap type, alkyl sulfate type, and all others as miscellaneous type. The alkyl sulfate (cream type) shampoos were most effective (*especially the tube and jar products*), and the soap type least effective; some products gave negative results. The extraction of the scoured wool, using some miscellaneous products yielded more than the original grease content found by petroleum ether extraction. A knowledge of the contents of these products would probably explain the unusual results obtained.

Conclusions

THE need for a method for evaluating shampoos appears to be evident. The B-P test method outlined appears to give reproducible results and evaluates clearly shampoos and detergents for effectiveness in removing grease from unscoured raw wool skeins. The commercial shampoos and detergents studied varied widely in their ability to clean grease wool and the majority tested were surprisingly ineffective. It is suggested that detergents and soaps for shampoos be studied with this type of test to get a clearer and more accurate picture of their cleansing power. It must be realized that commercial shampoos must combine with cleansing power, a strong sudsing action, an easy rinsibility, a delicate and clean fragrance and perhaps most important they must leave the hair in a soft, manageable and lustrous condition.

Report by G. Barnett and D. H. Powers at the December 1950 meeting of the Society of Cosmetic Chemists.

Toilet Soap Additives

One of the most common causes of toilet soap problems in milling or plodding is the careless incorporation of additives. Flaking or blistering of the soap may be due to acid additives such as phenol or boric acid, which are common ingredients of medicated soap. A "short base" soap, or one with a high salt content should be fortified against the "shortening" effects of acids. One to five per cent of any combination of lanolin, petroleum jelly, and glycerin, may be added to the soap base to control such an effect.

Besides perfume, other common additions to toilet soap include titanium oxide or zinc oxide, which improve whitening, and counteract possible transparency. Bases with a heavy oil (other than coconut or palm kernel) content in their composition usually become leathery during processing, and if at all overheated develop slight transparency. Unfortunately, this transparency is not uniform throughout the bar, but appears in streaks in the soap as it leaves the plodder. With modern machinery, these streaks do not constitute a problem, however, the bases still have a waxy appearance, which may be overcome by the addition of the zinc or titanium oxide. *Soap Perf. & Cos.* 23, No. 11, 1152-1155 (1950).

New Frothing Agents

The 1,1,3-trialkoxybutanes are suggested as frothing agents for use in the same way and for the same purposes as steam-distilled pine-oil. The preferred form is 1,1,3-triethoxybutane, which may be prepared by heating crotonaldehyde with an excess of ethyl alcohol in the presence of a small quantity of mineral acid. Hydroquinone may be added as an autooxidation-retarder. Brit. Pat. 641,932 Aug. (1950).

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Glycerol Determination

The dichromate method for the determination of glycerol may be made more accurate by a preliminary treatment with basic lead acetate, followed by extraction of the clear solution with ethylene oxide to remove the lower fatty acids. Glycerol lost by the ethylene oxide extraction compensates for the oxidizable impurities still present. *Fette u Seifen* 52, 174-5 (1950).

CMC in Laundries

The best effect with CMC used as an additive to soap, is achieved when the CMC is added at the early stages of laundering, or in pre-soaking of laundry goods. CMC action is attributed to the formation of a film of the CMC with the hydrophilic groups towards the aqueous phase, thus possessing poor adhesion for the hydrophobic soil particles. Report by K. J. Nieuwenhuys at the International BLRA through *Soap Perf. & Cosmetics* 23, No. 12 1229 (1950).

Tracer Cleaning of Metals

Metal cleaning studies with N,N-di-*n*-butyl stearamide as the radioisotopic tracer compound indicate that this compound is not too satisfactory since it is very difficult to remove, and this difficulty might be due to chemisorption. Tests with another oil-soluble tracer compound, *n*- undecane indicate that this compound is adsorbed to a lesser extent. A preferable tracer would be a tagged hydrocarbon of a carbon chain length approaching that of the lubricating oil used as the soiling medium, probably in the range of 20 to 30 carbon atoms in length. Such a compound should obviate the chemisorption difficulties of the amide soil and the volatility of the undecane soil.

The method of testing consists of soiling the pans with the soiling medium containing radioactive *n*-undecane or N,N-di-n-butyl stearamide, carefully spreading it over the pan surface, and then determining the initial count. The pan is then submitted to a standardized cleaning operation, dried under standard conditions, and the residual count determined immediately. J. C. Harris *et al*, *A.S.T.M. Bulletin* 82-83 (1950).

Rosin Modified SAA

The lather forming properties, and detergency of salts of sulfuric acid esters of higher aliphatic secondary alcohols are greatly improved by incorporating 5-50 per cent, preferably 30-40 per cent rosin, hydrogenated or polymerized rosin, or other rosin salts. None of the favorable properties of the ester salts is lost as a result of the rosin addition. Dutch Pat. 66,298 through *Chem. Abstracts*.

Stabilization of Soap

A process to manufacture soap which is stabilized against deterioration and development of rancidity, is based on the addition of a small amount of alkali metal, such as ammonium, sodium or mercury thiocyanate, in a quantity of about .1 per cent of the weight of the soap. The stabilizing agent can be added to the soap stock after saponification, during the crutching operation, or it can be added to the oils, fats or fatty acids before saponification. Brit. Pat. 642,596 (1950).

Surfactant Problems

Major problems confronting the surfactant industry are summarized as follows:

1. The production of synthetic detergents from petroleum or some other cheap raw material to obtain products with the good foaming and skin-conditioning qualities of the fatty alcohol sulfonates and monoglyceride sulfates.

2. Use of inexpensive salts as builders to give results comparable with those now obtained using relatively expensive molecularly-dehydrated phosphates.

3. Overcoming hygroscopicity associated with alkyl toluene sulfonates and, to a lesser extent, with other sulfonates.

4. Manufacture of non-ionics with improved foaming, but maintaining the advantages of present non-ionics.

5. Production of special synthetic detergents with no foaming tendency; and

6. Manufacture of satisfactory "syndet" bar products at costs competitive with soap bars.

Foster D. Snell, *Chem. & Eng'g. News* 29, No. 1, 38 (1950).

Shaving Soap Manufacture

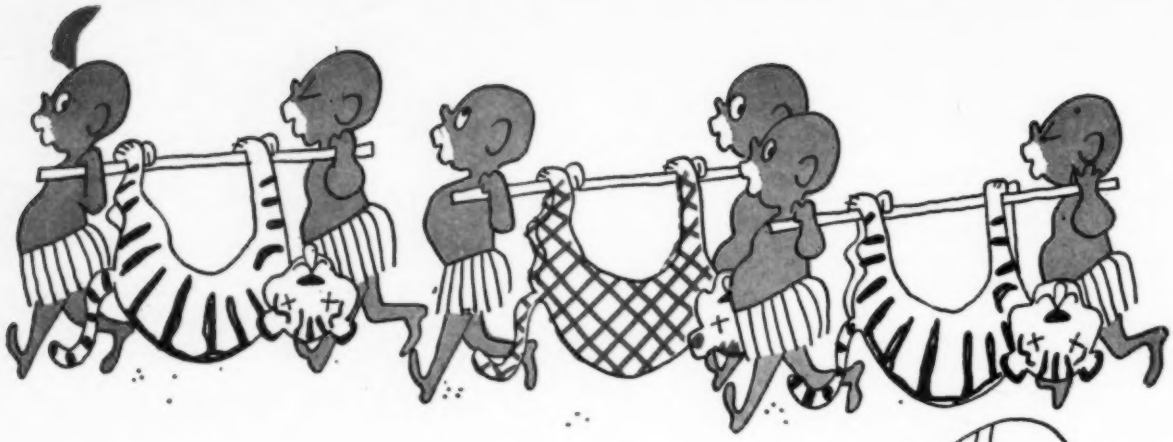
Saponification with soda and potash lye should be regulated in the manufacture of shaving soaps to prevent the formation of a highly hygroscopic potash soap, which appears sticky and is therefore unattractive. It is to be noted that stickiness may be due also to glycerine added in excess of the amount required for the saponification of the neutral fats. A glycerine content up to ten per cent may prove suitable, while amounts of 20 per cent are too high and affect the foaming capacity of the soap.

Foam development depends mainly on the composition of the fat mixture and the saponification lye; however, it depends also on the additives used. In addition to the common additives glycerine, casein, borax, boric acid and lanolin, other materials such as triethanolamine are added to impart particular properties. By incorporating three to five per cent of an emollient paste (composed of ten per cent methyl cellulose, 20 per cent triethanolamine, and 70 per cent water), in the shaving soap, a very fine foam is obtained. The triethanolamine mixture may be added to the shaving soap chips in the mixing machine. *Alchimist* 4, No. 10, 252-255 (1950).

New GE Lens Tissue

The Silicone Division of General Electric Co., and Silicone Paper Co. of America, both New York, have entered into the combined development of a silicone-treated tissue for cleaning goggles and glasses in factories and offices, it was announced recently. Sheets are interfolded for handling in a simple dispenser, according to the announcement.

Safety supply jobbers are being appointed and a nation-wide direct-mail and magazine advertising campaign has been initiated. The material is being sold under the trade name "Magic Lens Tissue."



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PRODUCTION CLINIC

By E. G. THOMSSEN, Ph.D.

AS WE PASS from the old year to the new one, we are more conscious of changes than when a week or month passes. We now write 1951 on our correspondence instead of 1950. Not only have we entered a new year but we are in the second half of a century.

Those versed in the study of the mind and human behavior inform us that the majority of people fear change. As a result, they prefer to continue to live in the same environment, will not change jobs, pursue in the main the same type of recreation year in and year out, follow the same office routine, and in business, resist improvement brought about by new methods of manufacturing or the use of new machines to speed up and economize on production. The general feeling in this respect is to "leave well enough alone." As long as individuals or companies are getting along satisfactorily, they tend to become complacent and resist the trying out of what they consider a "new-fangled idea." Their attitude seems to be "what do I get out of it, anyway, but a lot of grief."

The beginning of a new year is a good time to make an appraisal of whether or not changes are in order. Many of us make resolutions to break habits like smoking, drinking or overcoming small vices, overlooking matters of greater importance to our well being, especially as they apply to our businesses and jobs.

Changes in business matters are shunned because of indolence, lack of imagination, fear and the desire for security. We all meet men in business life whose advancement is curtailed because they cannot overcome these hurdles. They know that their plant is not operating at its greatest efficiency because equipment is outmoded or as a result of inferior processing methods. Yet such men are perfectly willing to let matters rest as long as they can get by or because they fear a change might upset the apple cart.

Younger men, particularly, who might advance themselves in their profession by increasing their knowledge and changing jobs seem perfectly willing to go along day after day at more menial work because they fear a change in employment might result in failure or the loss of security they enjoy in their present positions.

DR. THOMSSEN

In the past months, specific examples of these phases of change came to our attention.

In two plants, the processing of certain products was carried out by so-called "practical" men, well over fifty years of age. They were using the same equipment, methods and formulas they had used for many years previously. The owners of the business realized that the volume of business was slipping but these older men in whom they had confidence and depended upon for production had sold them on the idea that if the plant and processing procedure were modernized it would cause trouble. The younger men in the organization could not overcome the condition. Finally, after considerable effort, it was decided to try out a new and improved product in competition with the old. It did not take many months before the older contingent was proved wrong and the new product outstripped the old one in volume because it afforded greater profit and gave better end-use results.

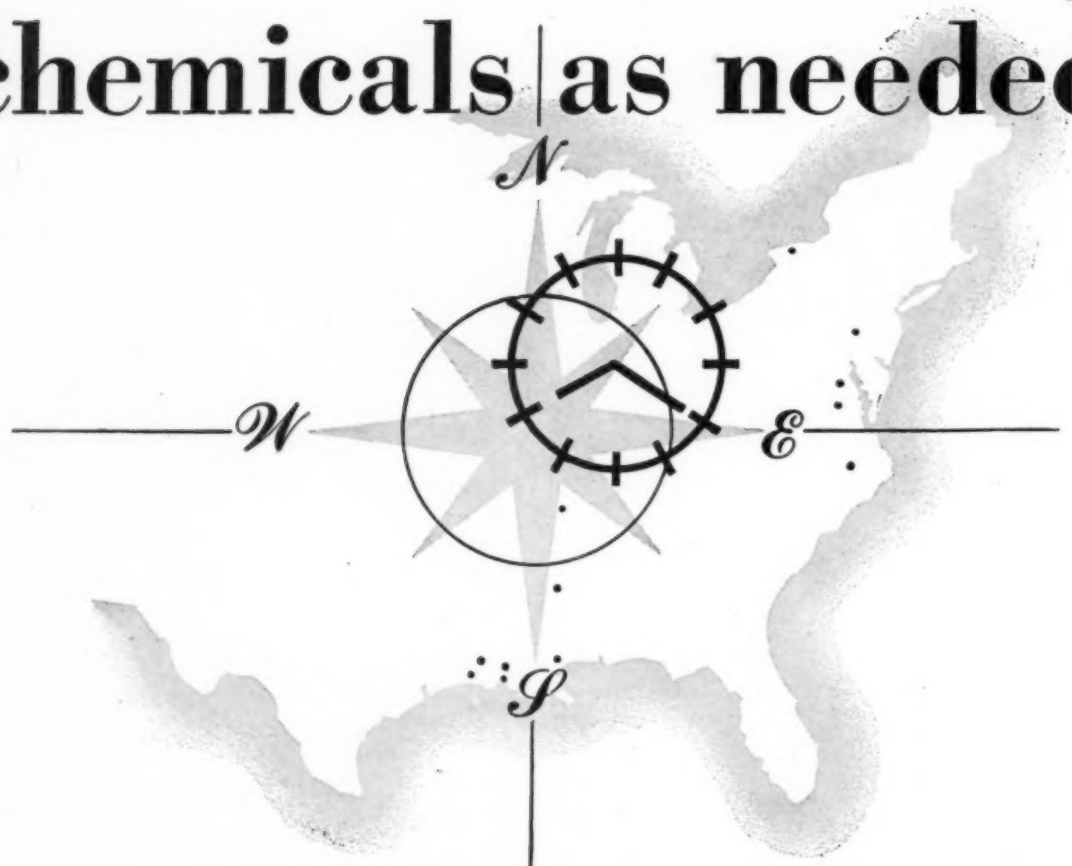
In another case, a new manufacturing supervisor was put in charge of a plant which had been run for many years by a recently retired, "man-who-stood-still" type of superintendent. The new chemist realized that the plant was behind times and inaugurated improvements in equipment and manufacturing methods. Every time he altered a piece of equipment or bettered a manufacturing process, several of the older employees, loyal to the former chemist, got together to buck the changes because they said the new man was ruining the business. They carried their tales to the boss who was somewhat sympathetic to their viewpoint. Fortunately the new man was alert, had gumption and the necessary drive to follow through. He insisted upon his changes being made. Today the plant he supervises is making more money and turning out better products than the owners considered possible.

In another case, we know of a younger man who felt his abilities were not being properly recognized in a job he had held down for over ten years. His boss was sympathetic to his bettering himself if an opportunity arose. The man knew the business, had initiative and was ambitious. A new job in a company larger than the one by which he was employed was offered to him. He looked it over, considered his present work, grew fearsome and turned down the new position. Now he regrets his decision and is more dissatisfied than ever before.

While it is true that changes are difficult to make and do not always work out successfully, it does not take much investigation to ascertain that successful companies are the most prone to introducing innovations. They realize the importance of being up to date in every detail of their business. Those who take a contrary attitude are the companies that are falling behind. Competition is keener than ever these days, and profits are more difficult to make. Only by being equipped and ready to make changes

DEPENDABILITY

-that delivers heavy chemicals as needed



More than ever before, the new Mathieson signifies dependability to customers. Physically, Mathieson's 14 great plants, strategically located to serve America's chief industrial areas, turn out a wider array of heavy chemicals than any other producer in the country.

In addition, many of Mathieson's basic products can be combined in various ways to meet shifting market conditions. Equally important to chemical consumers is the type of technical and sales leadership which is constantly enabling Mathieson to raise its standards of service.

As a result, the new Mathieson affords dependability based on capacity to produce, flexibility of production, diversity of products and processes, and high standards of service. Mathieson Chemical Corporation, Mathieson Building, Baltimore 3, Maryland.

Mathieson
CHEMICALS

12 Basic Heavy Chemicals • 14 Strategically Located Plants

SERVING INDUSTRY, AGRICULTURE AND PUBLIC HEALTH

to improve manufacturing methods can a business survive and prosper. Change must be cultivated, not abhorred. Especially is this necessary in these days when we face again an uncertain future. We must be alert to political and economic conditions and be prepared to make changes to adapt our businesses to them.

Steam Boilers

MANY of the smaller manufacturers often find it troublesome to generate steam to carry on certain operations. As a result, one finds heating of kettles and mixers carried on by direct heat. Eclipse Fuel Engineering Co., Rockford, Ill., manufactures a line of 38 different sizes and types of McKee gas-fired boilers in sizes from ½ up to 75 horse power. From such an assortment of sizes and types, it is quite possible to select a high or low pressure steam generator that will assure steady steam supply for manufacturing purposes. Eclipse also specializes in Dowtherm Generators used extensively for distillation of fatty acids and heating of various types of high temperature, chemical processing equipment.

Laboratory Mills

LABORATORY mills for standard or heavy duty grinding are available through Laboratory Construction Co., Kansas City, Mo. These give numerous settings to produce from coarser grinds to very find powders. Micrometer adjustments are used. No screens are necessary for changing and cleaning. These mills are cleaned easily by wipers on the cutting plates. The doors to the chamber and spout swing open for ready access. Standard fruit jars and other types of containers may be used to receive the ground samples. These mills carry the name "Labconco."

Fibre Drums for Liquids

THE use of fibre drums for shipping liquids is not new. Five gallon drums have been used in the past. To ship larger gallonage has been hazardous because of leakage due to breakage during shipment. The Bristol, Pa. plant of Rohm & Haas Co., Philadelphia, has developed a 55-gallon fibre drum to withstand safely rough handling. It is called "FPEB" or fibre-plastic-envelop-boot. The plastic bag, liquid tight liner is protected from breakage through the internal pressure of the liquid by a creped kraft paper, slightly larger than the liner. This pulls over the liner upward about one foot. The plastic bag laps over the top metal rim of the drum and permits opening it as often as one wishes. Rohm & Haas licenses the use of this drum for a nominal fee. Among the advantages of the drum are its ready availability during steel shortages and reduced shipping weight. The drum and liner both find re-uses after they are emptied, thereby salvaging part of the initial cost.

Detergent Bag

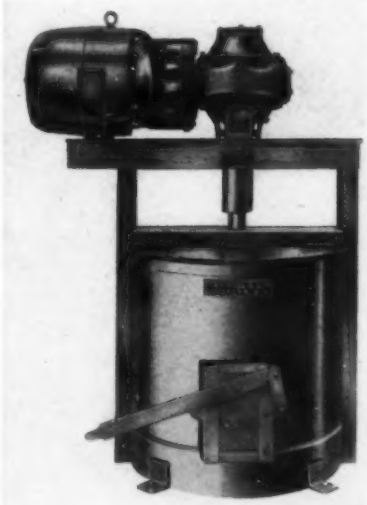
ARKELL & SMITHS, of Canajoharie, N. Y., are featuring the use of their "A & S Plasto-Pak Multi-wall" bag for handling synthetic detergents. They claim that an inner liner of polyethylene and kraft paper construction assures protection against moisture and chemical reactions. A patented "Electro-Seal" tightens any needle holes at the bottom of the bag. It is low priced and easy to handle.

A new model, direct motor driven heavy duty paste mixer (below) of 50, 100 and 150-gallon capacity has been designed by Charles Ross & Son Co., Brooklyn, it was announced recently. The new mixer, designated No. 132, features an individual right angle gearhead motor directly connected to the stirrer shaft, eliminating chains, gears and clutches.

An automatic cut-off which stops the stirrers from revolving, without damage to the machine should a bag or foreign matter fall into the mixer, is a safety feature.

Other advantages and improvements claimed for the unit are increased mixing efficiency thru greater pitch on the stirrers as they pass between each other at closer tolerances, and increased r.p.m.'s. These are said to result in finer, more homogeneous mixes and reduced mixing time.

Of heavy construction, the new mixer features larger type outlet gates furnished to facilitate the gravity feed and, opening and closing in a more direct manner. They are easily regulated by the mill hand from below.



Round Rod Screens

IN ORDER to produce a screen that keeps the screen openings uniform even when 50 per cent worn, the "Bee-Zee" round rod screen was conceived by Bixby-Zimmer Co., Galesburg, Ill. This feature assures longer life for screens. They may be used for dewatering, drying and sizing operations; are self-cleaning; do not clot, rust, or corrode.

Improved Soap Dryer

C. G. SARGENT'S SONS CORP., Graniteville, Mass., recently have improved upon their soap chip dryer. Accurate feed control and the thickness of the chip are resulting in faster output at lower cost. Three variable speed drives for the rolls, the feed apron and the dryer conveyor are built into the machine. Chip thicknesses of from 0.01 to 0.012 inch are consistently obtained across the full width of the chilling roll and conveyor at higher hourly outputs.

Mat. Handling Show

The fourth National Materials Handling Exposition will be held April 30 through May 4 at the International Amphitheatre, Chicago. The Materials Handling Conference will be held during three of the five days of the Exposition. This conference will be sponsored by the American Material Handling Institute.

Strain in Columbia Post

Dr. Franklin Strain was named recently as acting director of research in charge of the Columbia Chemical Division laboratories at Barberton, O. Associated with Pittsburgh Plate Glass Company's chemical operation since 1937, Dr. Strain has been serving as assistant director of research for the past eight years. He succeeds Dr. Alphonse Pechukas, who has resigned.

HARDESTY STEARIC ACID 1225

Measurers up on every count

Here is a commercial Stearic Acid specially developed to meet the most exacting needs of manufacturers of high quality products in which purity, stability, odor, color and uniformity are essentials. Produced under a new process developed by W. C. Hardesty Co., Inc., Stearic Acid #1225 represents a distinct advance in the fatty acid field.

If you are interested in improving the quality of your end product, whether it be cosmetics, soaps, creams, esters, stearates or other compounds requiring Stearic Acid, it will pay you to make a note of these superior Stearic Acid #1225 qualities.

BLAND ODOR AND ODOR STABILITY

Cosmetics made from #1225 Stearic Acid are free from reversion or masking of the odor imparted by fine perfumes. Esters made from #1225 Stearic Acid are extremely bland in odor with excellent final color.

LOW CONTENT OF UNSATURATED FATTY ACID

is indicated by extremely low iodine value and means a saturated fatty acid content of 98% to 100%.

LIGHTNESS OF COLOR AND EXCELLENT COLOR STABILITY

in manufacture of Esters, Soaps, Creams and other compounds, #1225 Stearic Acid shows a maximum resistance to darkening.

HIGHEST PURITY

Virtually free from unsaponifiable matter and mineral ash due to special new process of manufacture.

SPECIFICATIONS

Titre (130-132°F)	54.5 — 55.5°C
Color 5—¼" Lovibond Column (max)	2 Yellow — 0.2 Red
Iodine Value (Wijs)	0.5 — 1.5
Free Fatty Acid (as oleic)	103 — 105%
Acid Number	205 — 209
Saponification Value	206 — 210

W. C. HARDESTY CO., INC. — HARDESTY PRODUCTS ARE INDUSTRY'S KEYSTONE — 51 EAST 42nd STREET, NEW YORK 17, N. Y.

FACTORIES: DOVER, OHIO TORONTO, CAN.

ESTABLISHED 1926

Chemical Engineering Costs

Chemical Engineering Costs, by O. T. Zimmerman and Irvin Lavine, published by Industrial Research Service, Dover, N. H., is a compilation of costs data presented by a group of men well qualified in the field of chemical engineering equipment manufacture. Methods of computing chemical manufacturing costs are reviewed and explained in the first chapter by the senior authors, and the various factors involved in arriving at a costs estimate are evaluated and formulated. Each succeeding chapter presents specific and detailed costs information on some nineteen classes of chemical processing equipment, such as evaporators, filters, centrifuges, size-reduction equipment, pumps, industrial building materials and the like, furnished by men in industry on the equipment with which they are most familiar.

The book goes quite beyond the presentation of costs data and offers a considerable amount of practical information about the equipment that will be of aid to the engineer in evaluating the application of plant equipment to his needs. There are many useful specifications tables and cost charts.

The presentation suffers somewhat in that only items of equipment familiar to the contributing editors are treated in detail. As a result, some items of well-known manufacture are omitted. Information on such materials-handling machinery as conveyors and elevators is lacking. However, the authors have brought together in a single source many of the costs data of importance to the chemical engineer and have contributed much to bring his costs thinking up to date.

Willis J. Beach

New Vulcan Container

Vulcan Tin Can Co., Bellwood, Ill., announced recently that it is now producing a line of lighter gauge metal containers in one to five gallon capacities to be used as substitutes for standard I.C.C. lug cover containers. The containers have tin plate bodies with hand soldered locked seams and come with covers and bottoms of either tinplate or clear lacquered black plate. Lug covers are fitted with either tubular or flowed in gaskets and employ standard closing tools. The containers, which were widely and successfully used by a number of industries during World War II, at which time they were developed originally, are suitable for heavy and semi-solidified substances. They are not recommended for thin liquids. They are slightly more expensive than standard I.C.C. containers due to their method of manufacture.

Production has reached the point where these containers are available in carload or trailerload lots. L.T.L. shipments are limited to the Chicago area, however, because of the absence of cartons and the difficulty of packing. Samples and further information are available from the manufacturer.

Balkema to Packaging Bd.

E. H. Balkema of Colgate-Palmolive-Peet Co., Jersey City, N. J., was elected to the board of directors of the Packaging Institute at its 12th annual forum held recently at the Commodore Hotel, New York.

FTC Drops "Teel" Case

The Federal Trade Commission, Washington, D. C., announced recently that it had closed without prejudice the case in which Procter & Gamble Co., Cincinnati, was charged with deceptive advertising of "Teel" liquid dentifrice. Most of the advertising challenged by the Commission's complaint has been discontinued since 1946, and since October, 1949, "Teel" has not been advertised at all, the Commission's statement said.

Soap Meeting

(*From Page* 33)

York soap dispenser manufacturers and Charles Clark, director of sanitation, General Foods Co., New York.

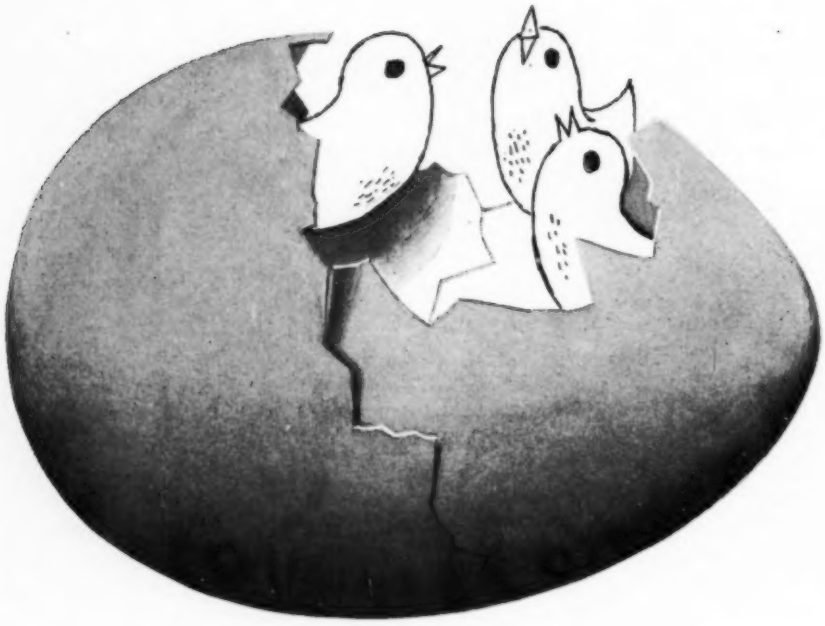
A general review of the glycerine situation will be presented at the Glycerine Division meeting by N. N. Dalton, AASGP consultant, who will preside. Glycerine research and the advertising and publicity programs will also be covered. Both divisions will elect officers.

The Maid of Cotton Fashion Show, from four to six p.m., and the cocktail party (from six to eight p.m.) sponsored by Metropolitan Sunday Newspapers, Inc., conclude the activities of the first day of the meeting.

The morning of the second day of the meeting (Feb. 1) opens with breakfast in the Oak Room, for which True Story Women's Group is host. The discussion session begins at 9:45 with N. S. Dahl of John T. Stanley Co., New York, presiding. At this session, George A. Wrisley of Allen B. Wrisley Co., Chicago, will discuss the "Association Cleanliness Promotion Activities", followed by Mr. Trigg on fats and oils and John W. McCutcheon on "Outlook for Tallow and Grease and Possible Expanded Uses of these Materials". The concluding talk, by Lawrence Flett of National Aniline Division of Allied Chemical & Dye Corp., New York, is "Industrial Application and Outlook for Synthetic Detergents".

A business meeting of association members only follows the group luncheon at which Mr. Harrison is to speak. Immediately preceding an Industrial Soap Division meeting is a meeting of the board of directors of the association. Professor J. W. Perry of Massachusetts Institute of Technology will speak at the Industrial Soap Division meeting on "New and Expanded Uses for Soaps and Synthetic Detergents". A four man panel will answer questions submitted by division members, and prizes will be awarded for those whose questions are used by the panel. Participating will be Mr. Brenn and R. E. Hauber of Procter & Gamble Co.

The meeting concludes with the association president's reception and the annual dinner in the grand ballroom the evening of Feb. 1. Mr. Hoffman will be the featured speaker and there is to be entertainment produced by the Mutual Broadcasting Company in cooperation with the three other major radio networks.



3 caustics in 1

This is the true story of a soap manufacturer who was buying 3 grades of caustic soda from as many suppliers. He thought he needed all 3 grades to satisfy the requirements of his various grades of soap and different processes. But it was a lot of trouble to receive, handle and store these 3 separate grades. So he brought his problem to Wyandotte.

We were able to meet all of his requirements with one grade of Wyandotte Caustic.

Are *you* buying "too many" grades of caustic? If you think you are, why not talk over your specifications with Wyandotte's Technical Service Department?

SODA ASH • CAUSTIC SODA • BICARBONATE OF SODA
CALCIUM CARBONATE • CALCIUM CHLORIDE • CHLORINE
HYDROGEN • DRY ICE • SYNTHETIC DETERGENTS • GLYCOLS
CARBOSE (Sodium CMC) • ETHYLENE DICHLORIDE • PROPYLENE
DICHLORIDE • AROMATIC SULFONIC ACID DERIVATIVES
OTHER ORGANIC AND INORGANIC CHEMICALS

WYANDOTTE CHEMICALS CORPORATION
Wyandotte, Michigan • *Offices in Principal Cities*

Wyandotte
REG. U. S. PAT. OFF.

PRODUCTS AND PROCESSES

Brushless Shaving Creams

Non-greasy brushless shaving creams are made from self-emulsifying glyceryl monostearate or diglycol stearate. No alkali is required since these substances contain a small amount of soap. A small proportion of mineral oil is added as a lubricant and the wetting power of the cream can be increased, if desired, by adding a small amount of wetting agent. A typical formula is as follows:

	Parts
Diglycol stearate	15
Cocoa butter	4
Stearic acid	5
Mineral oil	1
Glycerine	5
Water	70
Perfume and preservative	Q.S.

Schimmel Briefs No. 188, Nov. (1950).

Glycols in Soap

Polyethylene glycol, triethylene glycol, 1,3-butylene glycol and soap with added glycols are skin irritants and should not be used indiscriminately as glycerol substitutes. *Fette u Seifen* 52, 423-7 (1950).

Conditioning Bar Soap

Infra-red radiation is used for conditioning bar soap, reducing the drying period to a few minutes as compared with a period of several days by the old method of air drying. Air jets are allowed to play on the soap during the time it is under radiation to keep the soap under a certain temperature. A plodded laundry soap, with a moisture content of about 40 per cent should be kept under 95° F., while a similar soap with 20 per cent moisture is held below 120° F. The air blast should run parallel to the surface of the soap, hitting the soap at a substantive angle to maintain control of the heat.

Infra-red rays may be provided by any source of radiant heat, that is gas burners or infra-red lamps. In the latter case, it is suggested that the lamps be provided with reflectors. Satisfactory results are obtained with 375-watt internal reflector bulbs placed about six inches from the soap to be conditioned.

Continuous Soapmaking

A continuous process for making neat soap eliminates salting out and fitting, and does not use saponification catalysts. In this process, a water-in-oil emulsion is first formed between a glyceride or mixtures of glycerides, at a temperature slightly above the melting point, and an alkaline lye. The emulsion is then homogenized and passed through a saponification chamber in which neat soap is formed. The lye is used at a concentration which is high enough, having regard to the nature of the fatty materials, to lead to the production of neat soap, and in a quantity in excess of that necessary for complete saponification. Once the saponification reaction is initiated, it proceeds without the application of heat from any external source as long as the homogenized emulsion is fed to the saponification chamber. The heat evolved by the exothermic saponification reaction is sufficient to maintain the required conditions of temperature. Provision is made for a continuous and automatic testing for non-saponified fats in the soap and for alkalinity of the soap itself. Brit. Pat. 644,358 (1950).

SCS Detergent Additive

Sodium cellulose sulfate (SCS) is suggested for use as a detergent additive to prevent redeposition of soil. The compound, a new cellulose gum may be used also to form water soluble capsules for use as individual packages of products such as soap powders, bath salts and bluing.

SCS is made by treating cellulose fibers, such as wood pulp or cotton linters, with sulfuric acid and certain other reagents. The resulting granular product is readily soluble in hot or cold water. *Tennessee Eastman Corp. Bulletin.*

Exothermic Soap Bars

A soap cake which gives off heat on contact with water is described in British Patent 643,493. Since soap lathers more rapidly when used in hot water than cold, it is suggested to produce a soap cake which gives off heat at the mere contact with water, so that it would lather easily whatever the temperature of the water. According to the invention, the soap is made in two parts, one acid, the other basic, so that when the two reagents are brought into contact by means of washing water, they react exothermically. *Soap Perf. & Cosmetics* 23, No. 12, 1240 (1950).

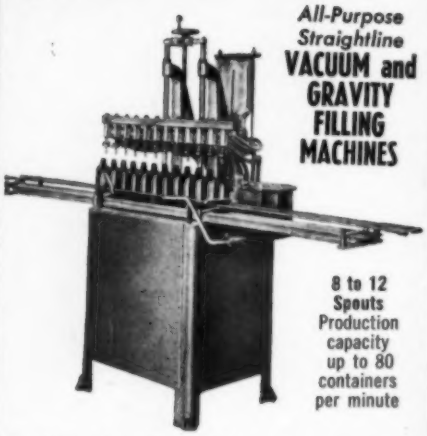
Detergent Skin Irritants

Tests of a number of synthetic detergents and laundry products containing synthetic detergents were made to study effect on human skin. A skin reaction number was determined for each product, on the basis of effects in the course of washing with the product. The synthetic detergents had a greater irritating effect on the skin than pure soap. The presence of sodium carboxymethyl cellulose lowered the irritating action of the synthetics. *Fette u Seifen* 52, 415-419 (1950).

Triple Duty Detergents

Morpholinium alkyl sulfates, new types of invert soaps, are claimed to have good cleaning power in addition to being bactericidal and deodorant. The products are said to be effective against household odors, as well as stronger odors such as are given off by glue factories, tanneries, etc. The detergents are stable and have good cleaning powers in the presence of acid solutions. They are compatible with alkalies, are crystalline, odorless and non-sticky. Report by W. F. Hart at meeting of Amer. Chem. Soc. (1950).

"Simplicity" is the word for
mrm FILLERS
• economical • efficient



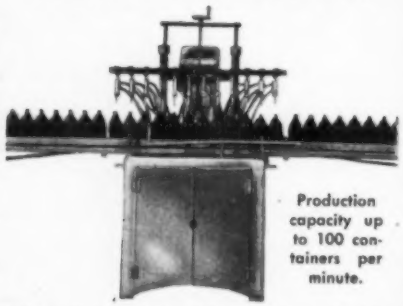
All-Purpose Straightline
VACUUM and GRAVITY FILLING MACHINES

8 to 12 Spouts
Production capacity up to 80 containers per minute

Fills thin to viscous liquids (shampoos, syrup, mustard, etc.). Fully adjustable to handle containers ranging from fractional ounce to one gallon — all shapes and mouth diameters, (glass, tin or plastic) including sprinkler tops, open top cans and jars.

A model for every need—
from 10 to 400 containers per minute

12 Spout Semi-Automatic
VACUUM and GRAVITY FILLING MACHINES



Production capacity up to 100 containers per minute.

Ideally suited for filling thin and viscous liquids as well as shampoos, in containers ranging from 1 ounce to 1 gallon in glass, and up to quarts in metal — all shapes and mouth diameters. Fully adjustable from one size container to another. Supplied with 10 foot automatic intake and discharge conveyor with variable speed drive control.

Write Dept. SSC-1 for literature on complete MRM line.

mrm company, inc.
191 Berry Street, Brooklyn 11, N. Y.
Manufacturers of a complete line of fully automatic and semi-automatic filling equipment.

HOW TO MAKE THE

Versenes* WORK FOR YOU . .

WHAT ARE THEY?

The Versenes* are powerful organic complexing agents that give you exacting chemical control of cations in solution. Chemically, they are the sodium salts of ethylene diamine tetra-acetic acid and other polyamino acids in liquid, powder or bead form. Exceptionally stable in hot or cold acid or alkaline solutions, their amazing complexing ability makes them invaluable agents in the manufacture of soda, potash or amine soaps and allied products.

WHAT CAN THEY DO FOR YOU?

No matter what you make in the way of Liquid, Cake, Powder or Flake Soap, Dishwashing Compounds, Laundry Detergents, Synthetic Detergents, Floor Cleaning Compounds or Wax Removers . . . *Versene* can help you.

Here are some of the things the *Versenes* can do for you:

1. Completely and permanently soften hardest water *without* precipitation.
2. Increase speed of filtration.
3. Prevent oxidation, increase shelf life, preserve whiteness.
4. Prevent rancidity, chalking and change of color.
5. Give "built-in" hardwater resistance.
6. Increase detergency and foaming action.
7. Solubilize proteins and saponify fats and oils.
8. Provide synergistic action with quaternaries.
9. Retain stability and efficiency at high temperature and pH.
10. Safe on colors. Make whites whiter, other colors brighter.
11. Prevent metallic contamination.
12. Make soap products competitive with synthetics in hard water areas.

WHAT YOU CAN DO ABOUT THEM

It will pay you to investigate the Versenes* . . . Get these benefits. Give your product sales, process and price advantages over competition. Send at once for Technical Bulletin #2. Write for samples and prices. Make the Versenes* — "Industry's Most Modern Chemicals" — work for you. Address Dept. C

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SOAP PLANT OBSERVER

By John W. McCutcheon

THE importance of spray drying methods to soap and synthetic detergent manufacturers was pointed out last month. It is accomplished chiefly by forcing a well heated stream of soap through a stationary nozzle of such design that the soap receives a swirling action which breaks it up into fine particles. This is done usually by having the stream enter in an offset position to the exit orifice. The abrasive action of the salts of heavily built soaps and detergents usually requires stainless steel nozzles or nozzles with very hard tungsten steel inserts.

Rotating nozzles are not commonly used for detergent products because they give too fine granulated a product. Their use would be most suitably confined to the production of coated soap beads. There a hard surface gives an initial abrasive effect which softens and disintegrates on prolonged contact with water.

The sprayed soap commonly falls through an up-stream of hot air which dries it as it falls. As in any operation of this nature, the drying is from the outside in, so that there is a time element involved which is dependent on the height of the tower, the temperature and humidity of the drying air and the temperature of the entering detergent mixture. When the air flows countercurrent to the particle fall, the first air it meets is the coolest and most humid, a factor which tends to prolong the fall in the tower and produce a non puffed, or dense, uniformly dried product. This type of operation is used where the density desired runs between 25-35 pounds per cubic foot.

The particle size is dependent on the pressure, diameter and temperature of the detergent at the nozzles. Superheating the soap just prior to spraying lowers the viscosity, decreases the particle size and induces puffing since the moisture in the soap may easily be high enough to convert it to

steam on release of the pressure. This factor is often overlooked in tower design. On occasion, auxiliary aids are used to give a fine uniform spray, such, for example, as air or steam lines running into the nozzle. These should be avoided since they add an additional factor which cannot properly be controlled and is a poor substitute for a pre-heater and a good high pressure pump. Pressures usually range from 80 up to 2500 pounds, although these higher figures are unusual and in most cases quite unnecessary whether the product is soap or a synthetic.

When a high pressure pump is used, it is best to back it by a low pressure one. Since the nozzles are small, usually ⅛ inch or less in diameter, it is very important to screen the material thoroughly from the crutcher. Failure to do this leads to untold nozzle difficulties and poor production. This screen should be in duplicate and of a fast opening type which makes for easy cleaning. The fault of clogged nozzles and screens may often be traced to the method of crutching. Builders such as soda ash and phosphate salts are very likely to partially hydrate and bunch into small hard lumps if added too rapidly or if the crutching operation is not sufficiently thorough. When highly filled soaps are being made, the crutcher or drop tank used for feeding the spray drier should have slow agitation to prevent any separation.

Common filling materials for soaps iaclude sodium silicate, soda ash, sodium bicarbonate and very frequently tetra sodium pyrophosphate, the pH of which is very close to that of soap. With synthetic detergents the builder is chiefly sodium sulphate formed in the process and sodium tripolyphosphate the pH of which is just slightly below that of the pyrophosphate above. Since synthetics are more heavily built than soaps, and have sodium sulphate present, the spray drying is somewhat more complicated. More corrosive materials, for example, are needed in construction. Greater drying power is required for the same production because there is less hydration and because the common detergent materials available are more hygroscopic than soap. (This will be continued in next month's report.)

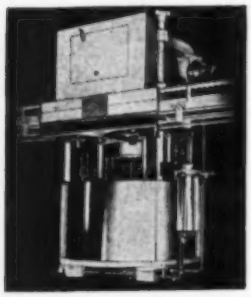
* * *

SOME time ago mention was made in this column concerning the Electrosonic Clothes Washer. This machine you will recall used a vibration principle of agitation. A demonstration of the effects of this type washing unit was interesting, and it was mentioned at the time that further data on detergent efficiency would be passed on as it became available. To date, nothing further has been heard and, in the absence of data to the contrary, it is considered that the device did not produce the results expected. We feel obligated to our readers to bring them up to date on this development. Every effort is made to sort out truly new ideas from the multitude that come our way. Occasionally we are mistaken as to their value.

* * *

THE glycerine situation is very much mixed up at present in regard to supply and pricing. One or two points of interest may be worthy of note. When prices of this commodity climb too high there are always a host of substitutes which may

FOR EVERY TYPE of FILLING OPERATION



U. S. Automatic Rotary Vacuum Fillers

In five sizes. Used exclusively in World's largest plants. The number one consideration in production planning. Write for Bulletin.

U. S. Semi-Automatic Machines

The Model B-49 Straight-Line Vacuum Filler introduces more automatic operations, reduces hand operations. For quick on-the-job changeover for any container size up to including gallons. Write for Bulletin.

U. S. Semi-Automatic Machines

The Model B-2 Vacuum Filler will handle standard finish or AGST finish. For liquids or semi-liquids. For various size containers. Fills two containers at a time. Fast, efficient, dependable. Write for Bulletin.

U. S. Siphon Filler

Rapid multiple tube filler for free-flowing low viscosity liquids. No power required. Fills containers from ounce to including gallons. Write for Bulletin.

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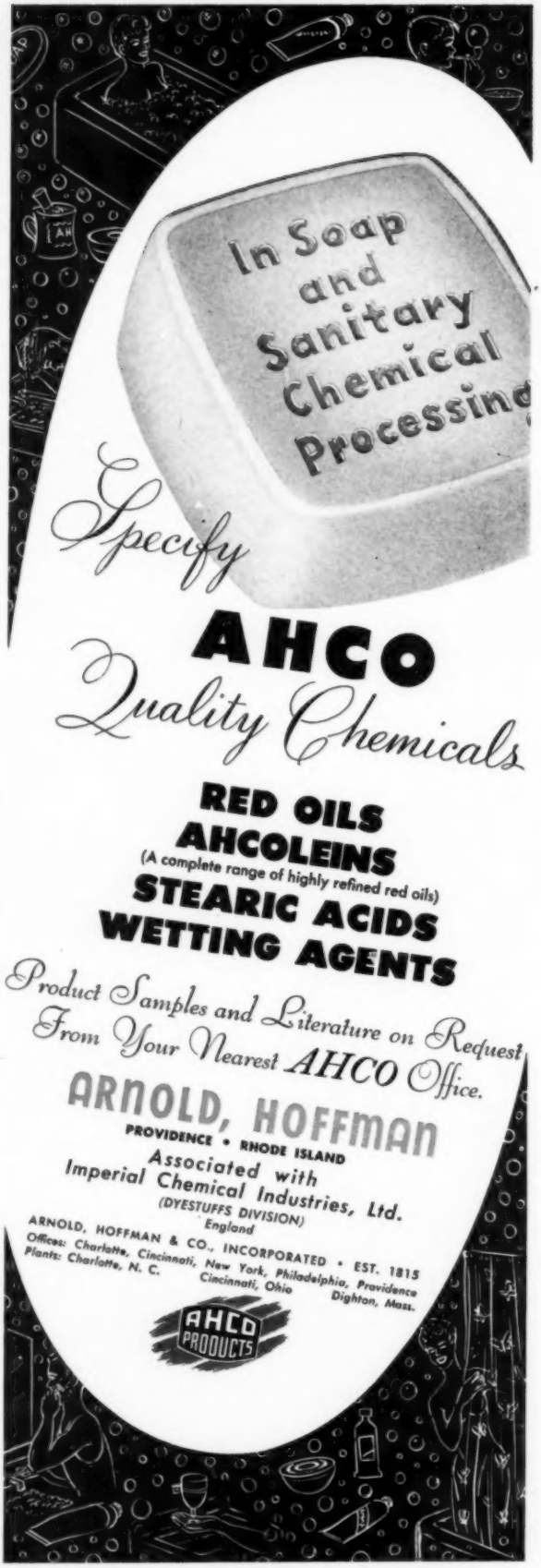


take its place. Even soapers on occasion require the use of such substitutes. In any major military operation, glycerine plays an important part.

One replacement product which has merit in some applications is Hexylene glycol $(CH_3)_2C(OH)-CH_2CH(OH)(CH_3)$. Details are obtainable from Technical Booklet SC: 50-1. Shell Chemical Corp., 500 Fifth Avenue, New York 18, N. Y. Of great interest in regard to glycerine refining is the Illinois Water Treatment ion exchange system for glycerine purification. This looks like a sound process which could be applied equally to both small and large production. A large scale plant has been in successful operation on sweet water lye for some time.

* * *

THE use of borates and perborates has never been very great in United States soap manufacture, although they have been used widely in Europe for many years. Apparently these materials have not received the attention they deserve. Borax, for example, may be converted to meta borate by mixing it with two moles of caustic soda. A saturated solution at 20° C. contains 9.5 percent, at 30° C.—11.4 percent. Its pH is approximately equivalent to that of soda ash. Unfortunately for detergents, a complex builder cannot be found whose alkalinity changes with temperature. For example, a builder for soaps or detergents that would be stable in luke warm water at a pH of 9 but decompose to a highly alkaline salt in hot water. The hexametaphosphates do this slowly, becoming more alkaline as they convert to the ortho phosphate. The change is too slow, however, to be of practical use in the laundry.

New Booklet on Talc

A 105-page catalog describing the chemical and physical characteristics and uses of a wide variety of talcs was issued recently by Whittaker, Clark & Daniels, Inc., 260 W. Broadway, New York. The first section of the catalog lists the uses of talc in various industries. The second section gives bulk and density values of 85 varieties of talc, giving their sources; color, brightness, physical description, uses, physical constants and chemical composition. The third section is devoted to specialties made by Whittaker, Clark & Daniels. Copies are available from the firm.

Chem. Sales Forecasting

Sales and Business Forecasting in Chemical Process Industries by R. S. Aries and W. Copulsky. Published by Chemonomics, Inc., New York. 135 pages, 10 x 6½ inches, paper binding, price $5.00.

This book discusses forecasting —what it is, methods used, advantages of accurate forecasting, and some applications in the chemical process industry. The methods used in forecasting include: a jury of executive opinion, sales force composite, correlation analysis, trend and cycle analysis, industry analysis, product line analysis, and end-use analysis. Each of these methods is presented with respect to theory and as applied by some companies. Methods of forecasting used by the U. S. Dept. of Agriculture, the Army, and the Dept. of Commerce also are presented.

Colloid Dispersions Book

Colloidal Dispersions by Earl K. Fischer. Published by John Wiley & Sons, Inc., New York. 388 pages, 6 x 9 inches, cloth binding, price $7.50.

Both the theoretical and practical aspects of colloidal dispersions are discussed in this text, including the practice of this chemical process in manufacturing textiles, ceramics, pigments, paint, printing inks, and many other industrial products.

The first five chapters consider most of the theoretical background, including solid-liquid interface, wetting, state of the dispersed solid, and rheological properties of dispersions. A complete discussion of particle size—measurement, in sedimentation, in elutriation—with data for various solids, etc., is covered in this section. The balance of the text deals with manufacturing details, the practical uses of wetting agents, operation of mixing equipment and dispersion machinery in mills.

The use of soaps and fatty acids in preparing pigments with modified properties is discussed. The use of soaps as emulsifiers and some of the metallic soaps as deflocculants, are considered throughout the text. The copper and nickel soaps are suggested as deflocculants for the carbon pigments, while the alkaline earth metal soaps may be used for other pigments. The lead, zinc and calcium soaps are used to render aluminum powder non-leafing. A complete discussion of surface active agents is included in the text.

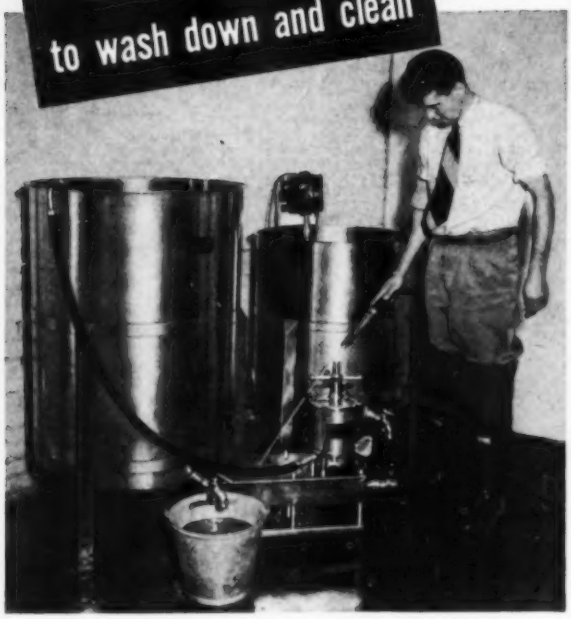
The author has presented a very technical subject in a clear and concise manner. The book is of particular value to production men and scientists who would like a basic knowledge of the theory and engineering underlying dispersion operations, but who are too busy to ply the widely scattered sources on the subject. The text is well illustrated with diagrams, sketches, and tables.

Bactericidal Surfactants

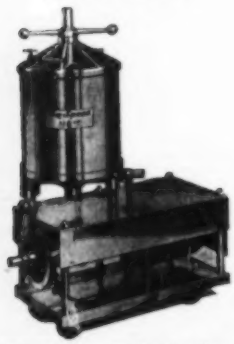
Studies of three surfactants for bactericidal action against *Staphyloccocus aureus* and *Escherischia coli* indicated complete suppression of growth by all three compounds at dilutions of 1:1000, and 1: 10,000, while control tubes showed abundant growths. Compounds tested were alkyldimethylbenzylammonium chloride (Zephiran, Winthrop-Stearns, Inc.), cetyltrimethylammonium bromide (Ctab, J. T. Baker Chemical Co.), and (*p*-diisobutylphenoxyethoxyethyl) dimethylbenzylammonium chloride (Hyamine 1622, Rohm & Haas Co.).

The test consisted of mixing one-tenth ml. of a suspension containing .001 mg. of organism with 10 ml. of a given dilution of the surface active agent. The mixture was incubated at 20° C. for ten minutes, and a .1 ml. portion of the bacillus-disinfectant mixture was then planted on each of two tubes of culture medium. The number of developing colonies was compared with that in the controls, where the bacilli were exposed only to distilled water. The suspensions were prepared from fresh cultures growing on nutrient agar. *Public Health Reports* 65, No. 48 1588-1599 (1950).

It's faster, and safer to wash down and clean



You'll no longer worry about damaging Mixer or Filter Motors or the electrical connections because they're completely protected from spilled or splashed liquids and careless washing at the end of an operation. You'll like the sparkling appearance of the highly polished, easy-to-clean stainless steel and you'll find it takes less time and labor to keep Alsop Equipment clean. Whether you base your buying decision on efficient year-round service or on price, you'll be influenced by the obvious superiority of Alsop Filters, Mixing Machines and Tanks. Why not write for a copy of our complete descriptive catalogue today?



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Filters, Filter Discs, Mixers, Agitators, Pumps and Tanks

MOORE'S PEER 100
Still Available In Quantity

Almost everything, from metal to labor, is becoming more difficult to obtain. Delivery dates are being advanced. But, right now, we can still supply our PEER 100 . . . in quantity.

We suggest that you place your orders NOW! Have an adequate supply of PEER dispensers on hand . . . to help you sell soap.

Duraglas globe. Modern metal bracket. No-clog, no-leak metal parts. Spring control plunger movement.

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NEW PATENTS

The information below is furnished by patent law offices of

LANCASTER, ALLWINE & ROMMEL

402 Bowen Building
Washington 5, D. C.

The data listed below is only a brief review of recently issued pertinent patents obtained by various U. S. Patent Office registered attorneys for manufacturers and/or inventors. Complete copies may be obtained direct from Lancaster, Allwine & Rommel by sending 50c for each copy desired. They will be pleased to give you free preliminary patent advice.

No. 2,528,531. Continuous Process for Making a Composite Soap Bar, patented by Donald E. Marshall, Summit, N. J., assignor to Micro Processing Equipment Inc., Des Plaines, Ill., a corporation of Illinois. The patent covers the process of producing a composite soap bar, which comprises, forming apertures in a soap lamination, forming inserts corresponding to said apertures and pressing said inserts into said apertures, stacking a plurality of soap laminations, at least a portion of which contain said inserts, at least one of the contacting surfaces between adjacent laminations being of moistened submicro-crystalline soap which is characterized by cold welding properties, and pressing said stacked laminations together to produce a composite soap bar in which a plurality of soap laminations are adhered together by the cold welding properties of said submicro-crystalline soap, whereby said laminations will remain joined together during storage and use.

No. 2,528,544. Insect Repellent Preparations, patented by Michel Pijoan, Boulder, Colo. An insect repellent composition is described comprising a mixture of 35 parts of 2 phenyl cyclohexanol and 15 parts of 2 cyclohexyl cyclohexanol emulsified in 50 parts of water containing an emulsifying agent.

No. 2,528,493. Insecticide Comprising Rotenone and (Butylcarbityl) (6-Propyl Piperonyl) Ether as a Synergist Therefor, patented by Loyd W. Brannon, deceased, late of Norfolk, Va., by Leila Brannon, executrix, North Ingleside, Va.; dedicated to the free use of the People in the territory of the United States. Patented is an insecticide comprising from 0.1 to 0.75 percent, by weight, of rotenone and (butylcarbityl) - (6-propyl piperonyl) ether as a synergist therefor.

No. 2,529,081. Apparatus for Rejecting Improperly Filled Soap Containers, patented by Harley Roland Hughes, Anchorage, Ky., and Curtis Darwin Rice, Omaha, Nebr., assignors to Colgate-Palmolive-Peet Company, Jersey City, N. J., a corporation of Delaware. The patent describes apparatus for checking the level of a substance in a container comprising a photoelectric inspection device having means for directing a beam of light onto said substance and light sensitive means for receiving light reflected from said substance, means for providing a pilot light beam for directing light onto said light sensitive means, a shutter, and means operated by positioning of said container adjacent to said device for momentarily interposing said shutter in the path of said pilot light beam so that said light sensitive means is exposed only to light reflected from said substance for a limited inspection interval.

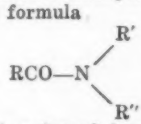
No. 2,531,460. Stabilized Metallic Soaps, patented by Howard Packer, Chicago, Ill., assignor to Witco Chemical Company, a corporation of Illinois. Patent describes a composition of matter consisting essentially of a nonpolar solvent, 40 to 90 per cent by weight of said composition of a water insoluble drier soap of a heavy metal, and 2 to 3 per cent by weight of said composition, of dibutyl tartrate, a stabilizing agent.

No. 2,531,390. Insecticide Comprising Rotenone and Piperonyl Cyclonene as a Synergist Therefor, patented by Loyd W. Brannon, deceased, late of Norfolk, Va., by Leila Brannon, executrix, Norfolk, Va.; dedicated to the free use of the People in the territory of the United States. Patent describes an insecticide comprising from 0.1 to 0.75 percent, by weight, of rotenone and piperonyl cyclonene as a synergist therefor.

No. 2,529,466. Method of Blending DDT, patented by Harry A. Weldon, Eastchester, N. Y., assignor to American Cyanamid Company, New York, N. Y., a corporation of Maine. A method of producing blended particles of a waxy solid and a finely divided solid diluent is covered wherein each particle of the waxy solid is coated with particles of diluent which comprises melting the waxy solid, subdividing the molten material into a cooling zone and permitting it to fall therethrough as liquid drops, simultaneously introducing a cloud of finely divided solids into the cooling zone whereby the solids adhere to the surface of the drops due to the liquidity thereof and the waxy nature of the liquid material, abstracting heat from the zone and solidifying the waxy material, and collecting the composite particles of waxy material coated with solid particles of dust in which the waxy solid is α,α-di(p-chlorophenyl)-β,β, β-trichlorethane.

No. 2,527,062. Method of Conditioning Bar Soap for Pressing by Means of Infrared Radiation, patented by Robert Franklin Heald, Nutley, and Charles Sutter and Russell Edward Compa, Bogota, N. J., assignors to Colgate-Palmolive-Peet Company, Jersey City, N. J., a corporation of Delaware. The patent covers the process of conditioning high moisture bar soap for pressing which comprises irradiating such bar soap with infra red rays and blasting the irradiated surface with a sufficiently strong current of air in the general direction of the heat rays that substantial temperature rise is prevented.

No. 2,527,076. Detergent Composition, patented by Walter C. Preston, Cincinnati, Ohio, assignor to Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio. A detergent composition is covered, characterized by reduced tendency to form sticky lime soap curd when used in hard water at rinsing dilutions, comprising essentially a ternary mixture of a water-soluble soap, a water-soluble salt of an organic sulfuric reaction product having pronounced detergent properties and having in its molecular structure a radical selected from the group consisting of sulfonic acid and sulfuric acid ester radicals, and an aliphatic carboxylic acid amide having the formula



wherein R is selected from the group consisting of hydrogen, alkyl, and alkylol and R′ and R″ are selected from the group consisting of hydrogen, alkyl, alkylol, and alkylene joined through an oxygen atom, the total number of carbon atoms in R, R′ and R″ being from about 9 to about 25 and the ratio of soap-sulfuric reaction product salt being from about ½:1 to about 8:1, the ratio of sulfuric reaction product salt:amide being from about 1:1 to about 10:1 and the amount of amide constituting at least 2 per cent of the combined weights of soap, sulfuric reaction product salt, and amide.

Washington Report

By C. C. Campbell

WASHINGTON officials are surveying the needs of the soap industry at the present time. This study covers the fields of supplies, markets, possible allocations, pricing and substitute materials. Everything possible is being done to avoid difficulties experienced in the war period.

Within a month or two, when these surveys have been completed, there may be announcements made as to plans for the future, but they are not expected to be drastic.

So far, the study indicates that there are ample supplies either on hand or projected and that with the increase in synthetic detergents, the soap situation should be eased materially, even in a time of general shortages. Officials believe there is a considerable slack to be taken up before soap shortages appear on the horizon.

As for rationing, government men agree there is no immediate prospect despite news reports that soap would be among the first products to be rationed.

Of course, in these days, events may occur to change the picture suddenly, but it is agreed in Washington that at present the soap situation is sound. There may be some curtailment of raw material supplies, but plans are under study to overcome difficulties.

Expansion of synthetic glycerine is being encouraged—the chief worry today being the acquisition of plants in which to make the synthetic material. It is considered that this problem is on its way to a solution which may be found before the shortage becomes more acute.

Of course, Washington officials keep their fingers crossed while discussing the situation and no responsible man will make long range predictions, there being so many uncertainties to be faced, but for the month or two, it is felt that the industry need not worry.

Fats and oils are still in good supply particularly tallow and grease. War in the Pacific could upset the oils and fats picture if coconut oil supplies were cut off.

* * *

While the manner in which the various Washington departments will divide authority is still not certain, tentative arrangements have been made along the following lines:

Jurisdiction over the soap industry will be generally vested in the Office of Industry and Commerce of the Department of Commerce. This department is now moving into larger quarters, giving up their cramped space at Temp. T. to a building at 801 E. Street. Glycerine and other chemicals will be handled by the Chemical Division of the Department of Commerce, fats and oils by the Department of Agriculture. Pricing will be under the authority of the Economic Stabilization Agency.

Nelson Eddy of Best Foods has just assumed charge of the fats and oils price division of ESA, and is building a staff which will include experts from the field.

* * *

The Committee on Utilization of Farm Crops (Gillette Committee) has been granted an extension until January 31, 1951, in order to complete last-minute inquiries and write an official report. It is understood there will be no further hearings on soap. A report on the hearings held earlier will be ready for distribution about February.

* * *

NPA is getting under way and the expectation is that it will be a strong group exceeding the overall authority of the War Production Board in our previous war history.

It is expected that by next July a complete system of allocations of key materials will be in effect. Manly Fleischmann, general counsel, states that he could "not conceive of a controls program short of this which would do the job required by next summer. The plans now being prepared are similar to the "controlled materials plan" of WPB.

If the Authority goes through with its plans it would mean that NPA would pass on nearly all purchases and deliveries of scarce materials.

* * *

Mobilization of scientists into a special service which would allocate scientific manpower to meet military and civilian needs alike has been proposed by the American Institute of Physics. A similar plan has been recommended by the Federal Government's Interdepartmental Committee on Scientific Research and Development.

The proposal recommends setting up a new class under Selective Service Scientific and Technological Service.

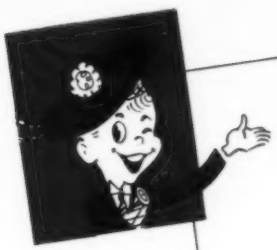
* * *

Secretary of Labor Tobin states that the chemical industry must pay minimum wages ranging from 85c to

(*Turn to Page* 119)

SANITARY PRODUCTS SECTION

Insecticides • Disinfectants • Moth Products
Floor Products • Polishes • Chemical Specialties



"Here's a PROFIT-Making TIP you can't afford to pass"
Says Scotty Klenz-Aire

You can make a FINISHED DEODORANT SPRAY

for only 75¢ a gallon

with KLENZ-AIRE DEODORANT OIL

IT'S AMAZING! IT'S ALMOST TOO GOOD TO BE TRUE!

Klenz-Aire Deodorant Oil—*which we firmly believe is the finest, most economical Deodorant Oil you could buy*—combines with formaldehyde and water to make a milky emulsion spray that . . .

- **will not break down or separate**
- **costs only 75¢ a gallon** ***(for the finished spray)***

This wonderfully effective spray kills all tobacco smells, cooking odors, destroys odors in public rooms, theatres, kitchens, apartment houses, rest rooms, schools, hospitals, taverns . . . and leaves a pleasant, fresh after-scent that people like!

Klenz-Aire Deodorant Oil makes a truly all-purpose spray. It works in any type of dispenser, including the new self-spraying plastic bottles.

We'll be glad to send you generous samples of Klenz-Aire Deodorant Oils for your own experiments, or our chemists will work with you in developing a finished spray of your own. *Why not write us today!*

AROMATIC PRODUCTS, INC.

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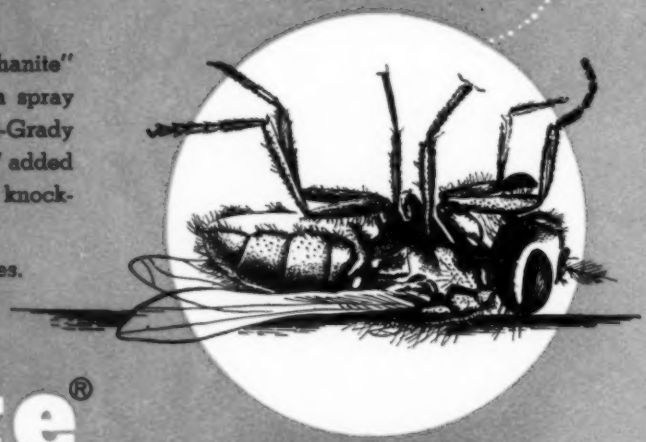
down and out FAST

Household sprays that knock down insects quickly are the ones customers ask for again and again. Hercules Thanite® puts this power of quick knockdown into sprays. This toxicant, a terpene thiocyanoacetate, does an excellent job yet is low in cost.

For example, three gallons of "Thanite" in 97 gallons of base oil produce a spray that grades AA by the official Peet-Grady method. And as little as 1% "Thanite" added to 5% DDT residual sprays gives that knockdown punch.

Write for technical details and prices.



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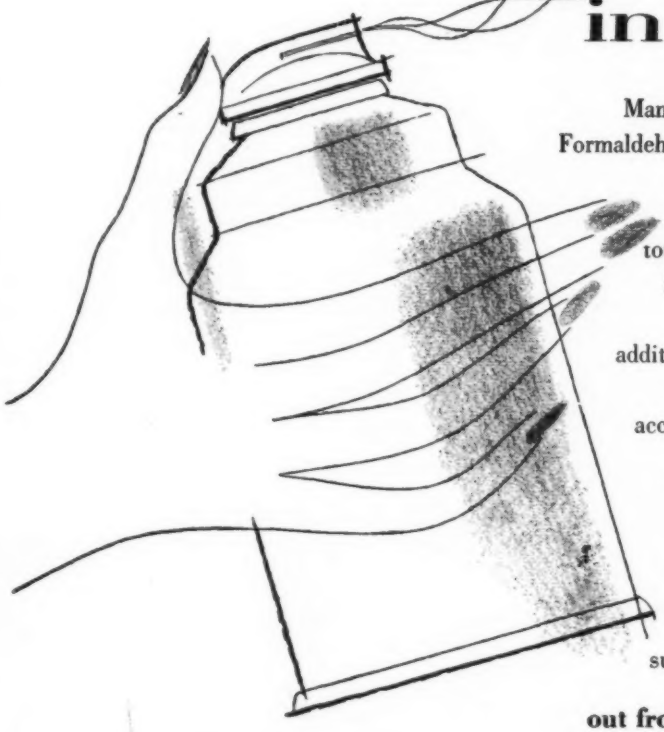
PUT YOUR PRODUCT

out front
on display
in demand



Manufacturers of Room Deodorants, Insecticides, Formaldehyde Sprays, Detergents, Liquid Soaps, Polishes, Waxes and Cosmetic Products are all agreed they face keener, tougher competition in the days immediately ahead. These manufacturers also acknowledge the need for additional promotional and merchandising aids to make their products more acceptable, more saleable to the consumer.

Recognizing this need, the D&O Laboratories have developed a comprehensive series of tested Aerosol fragrances that are bound to add forceful, persuasive, compelling subtleties that will put your product...

out front, on display, in demand.

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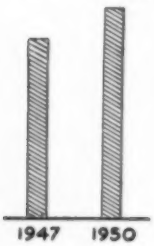
FOURTH "FREON"

AEROSOL-PACKED PRODUCTS GAINING IN

Survey tells what dealers think about aerosols . . . Indicates bright future for aerosol manufacturers!

70% of all dealers interviewed stock aerosols



This latest "Freon" Survey shows that aerosol-packed products are now sold by the majority (70%) of retailers including drug, department, food, hardware and variety stores and service stations. This represents an increase of 13% over the situation in 1947, when the first "Freon" Survey was conducted.

Insecticides best sellers . . . but new products show gains

Dealers report that while insecticides are still their best-selling aerosols, other aerosol products such as room deodorants, moth proofers, paints and plastic sprays are runners-up. New aerosol products—personal deodorants, shampoos, shave creams, suntan lotions and the like have recently appeared on the market and should receive hearty approval.

Aerosol method of dispensing is better —report 80% of dealers

Asked what they think of aerosols, the Survey indicates that 80% of dealers interviewed are of the opinion that aerosols are superior to other methods of dispensing various products. That this belief is growing is seen from the 1947 report in which 72% of the dealers favored aerosol methods.

Drug Stores best outlets—Food Stores gaining rapidly

Of dealers interviewed in the "Freon" 1950 Survey, 94% of the drug store owners and managers stated that they now stock aerosol-packed products . . . an increase of 10% in the past four years. Food Stores are moving up rapidly in importance—from only 25% stocking aerosols in 1947 to 45% in 1950. Department Stores and Hardware Stores are also major outlets.

DUPONT
REG. U.S. PAT. OFF.
BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

"FREON" SAFE

SURVEY SHOWS

DEALER ACCEPTANCE AND SALES

Low-pressure type of aerosols now most popular

Both in 1949 and again in 1950, dealers were asked whether they stocked high- or low-pressure aerosols. The "Freon" Survey indicates that 58% now stock the low-pressure type; 9% stock high-pressure aerosols and 33% stock both types. It will be noted that a total of 92% of the dealers carry low-pressure aerosols. Dealers report sales of low-pressure aerosols exceed high-pressure types by 20%.

Customers insist on safety and there's no safer propellent than "Freon"!

Safety is an important factor in aerosol sales. It is often in the customer's mind when buying . . . often spells the difference between a sale and no sale. That is why it's a definite dealer-asset to be prepared to stress the many safety characteristics of "Freon" propellents. These propellents are nonflammable, nonexplosive, of extremely low order toxicity . . . harmless to foods, furs, flesh, fabrics and finishes. They have no color or taste and are practically odorless.

Don't take chances! Consider these "Freon" exclusives!

"Freon" and only "Freon"—can offer all these safety benefits *plus* a range of pressures from 1 to 120 lbs. per sq. in. gauge. And "Freon" alone can provide the special solubility characteristics needed for certain ingredients. So take no chances . . . insist upon using only "Freon" safe propellents!

FREE! *Your own digest copy of this 4th big Survey of the aerosol market . . . the only report of its kind anywhere—together with complete data on "Freon" propellents. Write today: "Kinetic" Chemicals Division, E. I. du Pont de Nemours & Co. (Inc.), Wilmington 98, Delaware.*

Plan now to aerosol-package *your* product today!

HERE'S HOW TO GO ABOUT IT:

1. Determine that there is a market for the contemplated product.
2. Develop a stable formulation, including propellent, which can be packaged in a suitable container.
3. Shelf-test the proposed finished-product package before production or sample merchandising is attempted.
4. Have a quantity packaged for test marketing. There are custom loaders who will fill quantities as low as 5,000.

"KINETIC" TECHNICAL SERVICE WILL HELP YOU

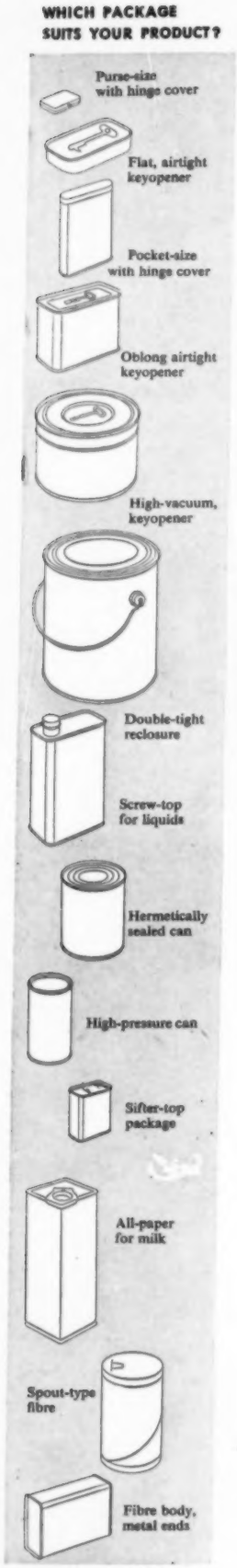
As a service to users of "Freon" safe propellents, Du Pont is ready to assist any manufacturer in entering the aerosol market. This includes aid at every step from market exploration to planning shelf-testing and interpretation of the results.

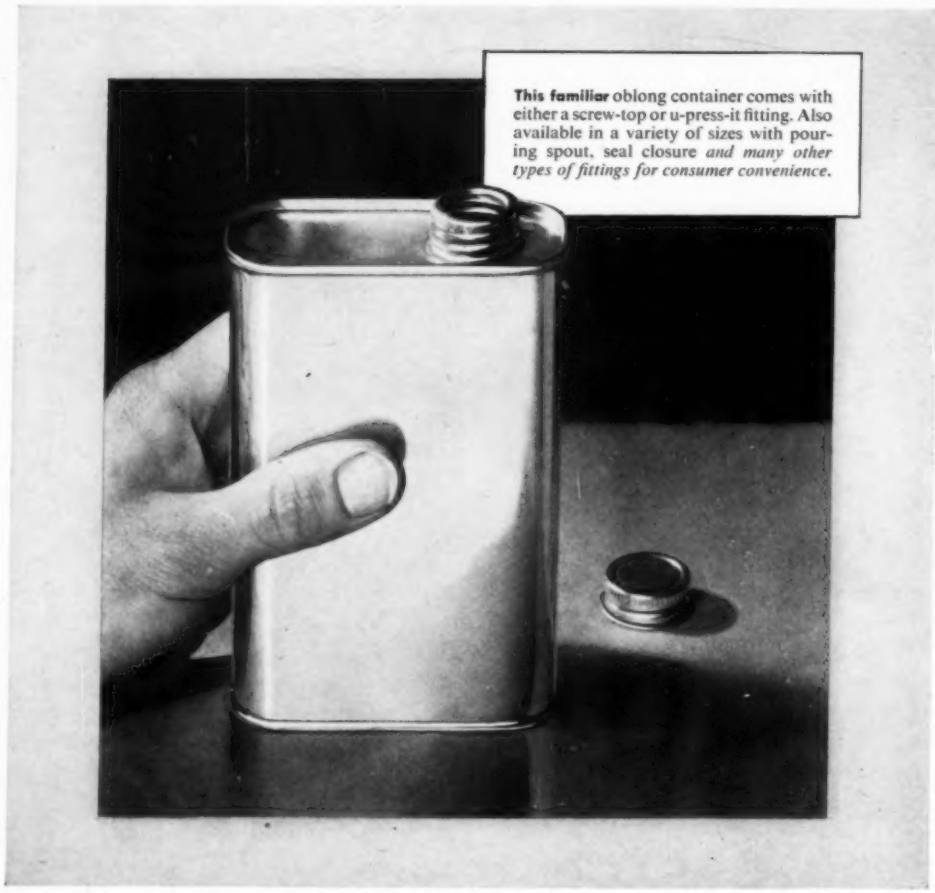
If you are thinking of entering the aerosol market, be sure to find out how "Kinetic" may be of real help to you. No obligation. E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Division, Wilmington 98, Delaware.

PROPELLENTS

KINETIC
REG. U. S. PAT. OFF.

"FREON" is Du Pont's registered trade-mark for its fluorinated hydrocarbon propellents.




This familiar oblong container comes with either a screw-top or u-press-it fitting. Also available in a variety of sizes with pouring spout, seal closure *and many other types of fittings for consumer convenience.*

Are you considering the consumer when you package liquids?

This container makes friends—keeps 'em!

You know it as the handy can that pours easy, doesn't drip and closes tight.

Advertising experts and sales managers know it as the package that "works with" the label—plenty of space to show your brand in brilliant color.

It now helps sell such products as linseed oil, turpentine, paint and varnish remover, maple syrup, honey.

It could easily do the same robust selling job for liquid detergents, liquid wax or olive oil.

Brass? Silver?

And how about brass or silver polish, glass cleaners?

To sum up, *this container is ideal for many liquids where positive reclosure is essential.*

Don't you think your package-development experts should get together with ours?

Since 1901 Canco has been responsible for just about every important development in the packaging industry—food and non-food products alike—involving an infinite variety of containers that are metal, fibre or a combination of both.

Let Canco help *you* in designing labels, cutting costs, building sales and advising on packaging, processing, filling and closing.

For prompt help in production-line emergencies, and containers in any quantity when you need them, take our advice and *call Canco first!*

AMERICAN CAN CO.

CANCO

NEW YORK
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SAN FRANCISCO
HAMILTON, CANADA

little fellow with BIG appetite

Aviator's helmet with fur completely eaten away by larvae of the webbing clothes moth. Cocoons are seen on the upper portion. (Photo by U. S. Department of Agriculture, Bureau of Entomology and Plant Quarantine.)

Tineola Biselliella Hummel has a monstrous appetite for a little fellow . . . especially when he is in the larva stage. His favorite dishes are fur, woolen garments, rugs and anything else derived from hair or wool. The damage he does runs into figures that almost are beyond belief.

Tineola Biselliella Hummel, commonly known as "the webbing clothes moth," can be controlled easily and economically . . . in homes and in storage vaults . . . through the use of Santochlor, Monsanto's para-dichlorobenzene.

Santochlor is safe and easy to use. It is relatively harmless to human beings and lower animals and presents no fire hazard. Its pleasant odor disappears within a few minutes after garments are removed from storage.

Currently, manufacture for defense has first call at Monsanto. Hence, for civilian use, Monsanto insecticidal and herbicidal chemicals are in short or critical supply. Literature and information on any of the products and their applications will be sent upon request to any Monsanto Sales Office or to MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1700 South Second Street, St. Louis 4, Missouri.

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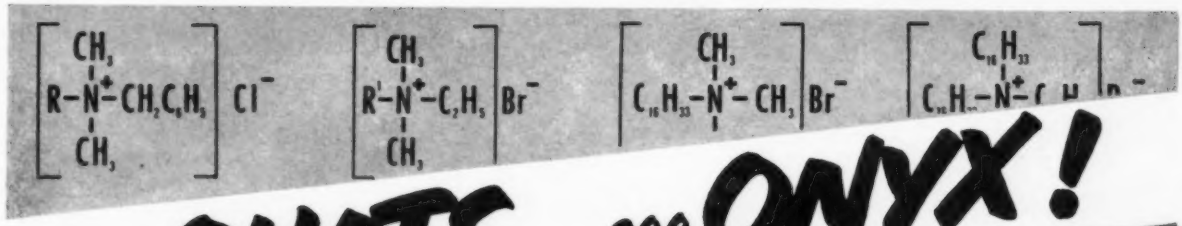

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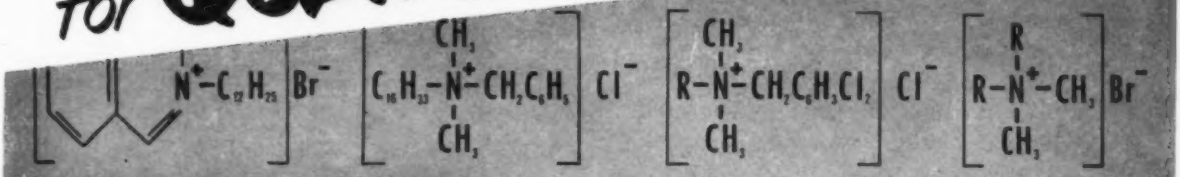

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by John W. McCutcheon

445 PAGES

At last, a practical text concerned primarily with the detergent compounds, defining the various types of synthetics as to class, manufacture, application and processing is now available. This text will be of interest to all in the detergent field, including those concerned with the manufacture, packaging, application and processing of surfactants, as well as those supplying raw materials.

CONTENTS

Chapter 1 — INTRODUCTION — Development of surface active agents, particularly synthetic detergents.

Chapter 2 — FUNDAMENTALS OF SURFACE ACTIVITY—Nature of forces at surfaces, relation of surface activity with emulsification, foaming, detergency, etc.

Chapter 3—EVALUATION METHODS AND ANALYTICAL EXAMINATION OF DETERGENTS—Various, analytical tests are described, as well as tests for handling and purchasing.

Chapter 4—EXAMINATION OF SURFACE ACTIVE AGENTS AND SYNTHETIC DETERGENTS BY CLASS AND TYPE—Discussion of each class with regard to chief types, characteristics, and future utility.

Chapter 5 — MANUFACTURING PROCESSES AND RAW MATERIALS—Technique involved in the manufacture of a number of typical classes of surfactants is given. Source and preparation of raw materials is included also.

Chapter 6 — TRADE NAMES PRODUCTS AND PROCESSES— Nomenclature of commercial products, by composition, form or other characteristics.

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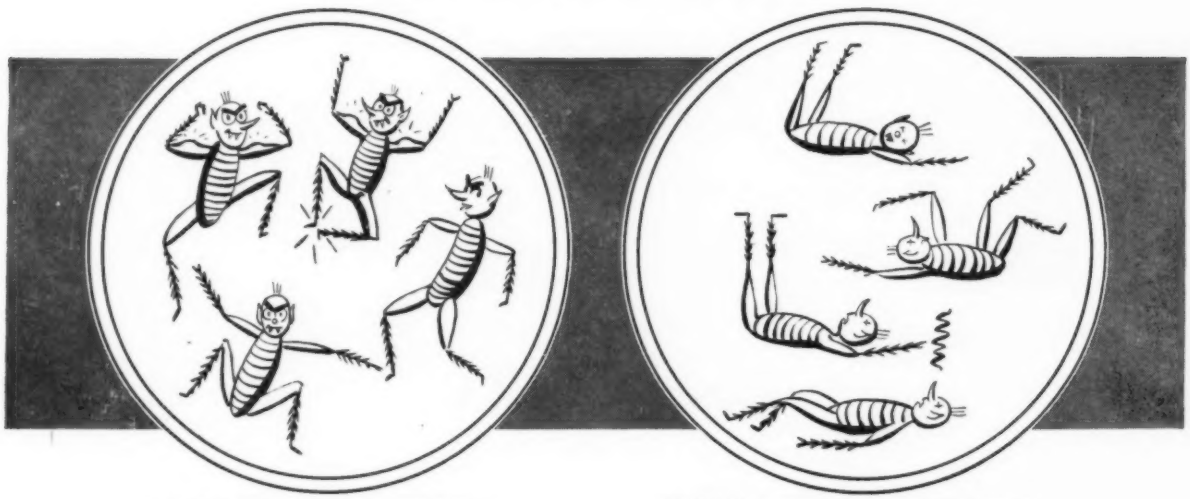

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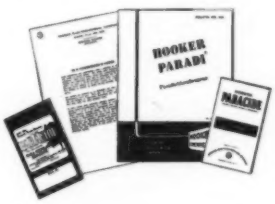

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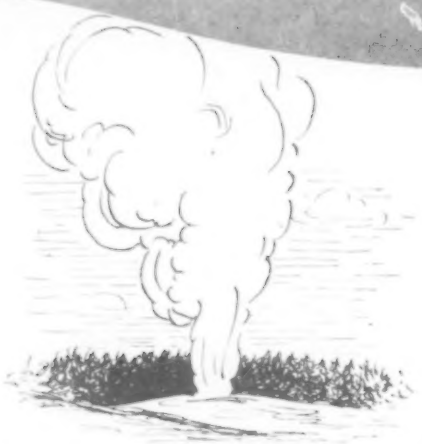

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SANITARY PRODUCTS
A SECTION OF SOAP

THE Delaney Committee whose hearings have been creating quite a commotion in Washington, folded up its tent rather suddenly late last month with the adjournment of the 81st Congress and stole away into the night. Incidentally, the Committee quit before hearing any testimony of witnesses from the U. S. Department of Agriculture, who might have been expected to be the first experts called, if the Committee really were seeking facts rather than headlines. Whether or not the Committee will be reconstituted for the new Congressional session is not as yet clear, but certainly if it is, the first official act should be to call the scientists from the Department of Agriculture for their expert testimony.

The Delaney Committee, in its performance to date, has given the distinct impression that it is out to build up a case for new legislation. The tone of the inquiry and the direction of the questioning quite apparently have been toward building up the picture that existing authority under the Federal Insecticide, Fungicide and Rodenticide Act and the Food, Drug and Cosmetic Act is insufficient to protect consumers against potentially dangerous materials used to control insect damage to foods in the field, in process and in storage. And the average legislator's convenient answer to most any vexing problem is the one suggested here,—a new law!

If the proposed new legislation is revived in the 82nd Congress, we offer several notes of caution to the committee. First, if producers and users of pesticides are subjected to duplicate and perhaps conflicting control, with authority divided between Agriculture and FDA, a thoroughly confused situation most certainly will result. Second, may we warn again that if use of any major pesticide is seriously abridged, it may be impossible to feed and clothe the country under conditions now existing.

A NEW technique in dairy fly control, which promises to give us another weapon which will be effective, at least temporarily, in the control of these important insect pests, is currently receiving considerable attention. We refer to the "strip method" of fly control in dairy barns, developed by David Pimentel at Cornell University, and shown to be highly promising in initial test work. In the new technique, strips of screening are sprayed, outside the barn, with a highly concentrated solution of toxicant, then hung in the barns, where they proved quite effective in controlling flies over an extended period. The most effective toxicant proved to be dieldrin.

Elimination of any possibility of contaminating milk, milking equipment, feeding troughs, or drinking water is an obvious advantage of the method.

Another important feature is that partially paralyzed flies are still able to cling to the screen surface until they absorb a lethal dose, although on other materials they often slip off before absorbing sufficient insecticide to assure a kill. Thus, since there is a minimum possibility of flies being exposed to the insecticide and still surviving, it is expected that there will be reduced opportunity to build-up of resistance.

While it is emphasized that present results are based on only one season's work in but a single area, still the exceptional success with the method and the toxicant, accompanied by the high degree of safety reported in use, give promise of equally good results as the method is tested further during the coming season. Insect control, historically, seems long to have been a case of moving ahead three steps, then dropping back two. With this new method, we could be taking another of those forward jumps.

AGAINST a background of some of the worst news since the beginning of the fighting in Korea, the 37th annual meeting of the Chemical Specialties Manufacturers Association, attended by over 550, was held at the Hotel New Yorker, New York, Dec. 4-5. Main interest at the meeting, which drew the largest attendance of any in the history of the organization, centered on how the chemical specialties manufacturers will meet the challenge of greatly intensified rearmament and its problems. The program, in the opinion of many, was the best ever. New developments, particularly with respect to insecticides; the expanding market for aerosol products; consideration of the merits of the quaternary ammonium and chlorine type disinfectants; problems in purchasing and applying waxes; toxicity, and new advances in detergent technology were also covered, mainly in division meetings of the various industry groups represented by the association.

All officers of the association, including Leonard J. Oppenheimer of West Disinfecting Co., Long Island City, N. Y., president, were reelected. A change in the makeup of the board of governors was effected with the election of H. L. Sanders of Ninol Laboratories, Inc., Chicago, as chairman of the Soap, Detergent and Sanitary Chemicals Division. He succeeds H. W. Zussman of Alrose Chemical Co., Providence, who relinquished his duties as chairman of the division but continues as a member of the division's administrative committee. Mr. Sanders began his term as a member of the board effective Jan. 1, and will serve for one year. All other divisional chairmen were reelected as members of the board of governors for one year terms. Other members of the board of governors continue two year terms

Renames L. J. Oppenheimer

Chemical Specialties Manufacturers discuss role in critical year ahead at 37th annual meeting. Over 550 attend largest gathering in association's history. Officers reelected.

to which they were elected at the annual meeting in 1949.

Other changes in the makeup of the officials of the divisions include the naming of Mr. Zussman and A. G. Peck of Peck's Products Co., St. Louis, to the administrative committee of the Soap, Detergent and Sanitary Chemicals Division. P. G. Bartlett of West Disinfecting Co., was elected as vice-chairman of the division succeeding Bernard Freudenthal of Chemical Service Co., Baltimore, now a member of the administrative committee. C. S. Kimball of Foster D. Snell, Inc., New York, was elected vice-chairman of the Waxes and Floor Finishes Division, and A. E. Budner of S. C. Johnson & Son, Inc., Racine, Wis., was named to the administrative committee, which, in addition to the above, is composed of Bayard S. Johnson, Franklin Research Co., Philadelphia, division chairman, Donald M. King of Masury Young Co., Charlestown, Mass., and Ralph B. Trusler, Davies-Young Soap Co., Dayton, O.

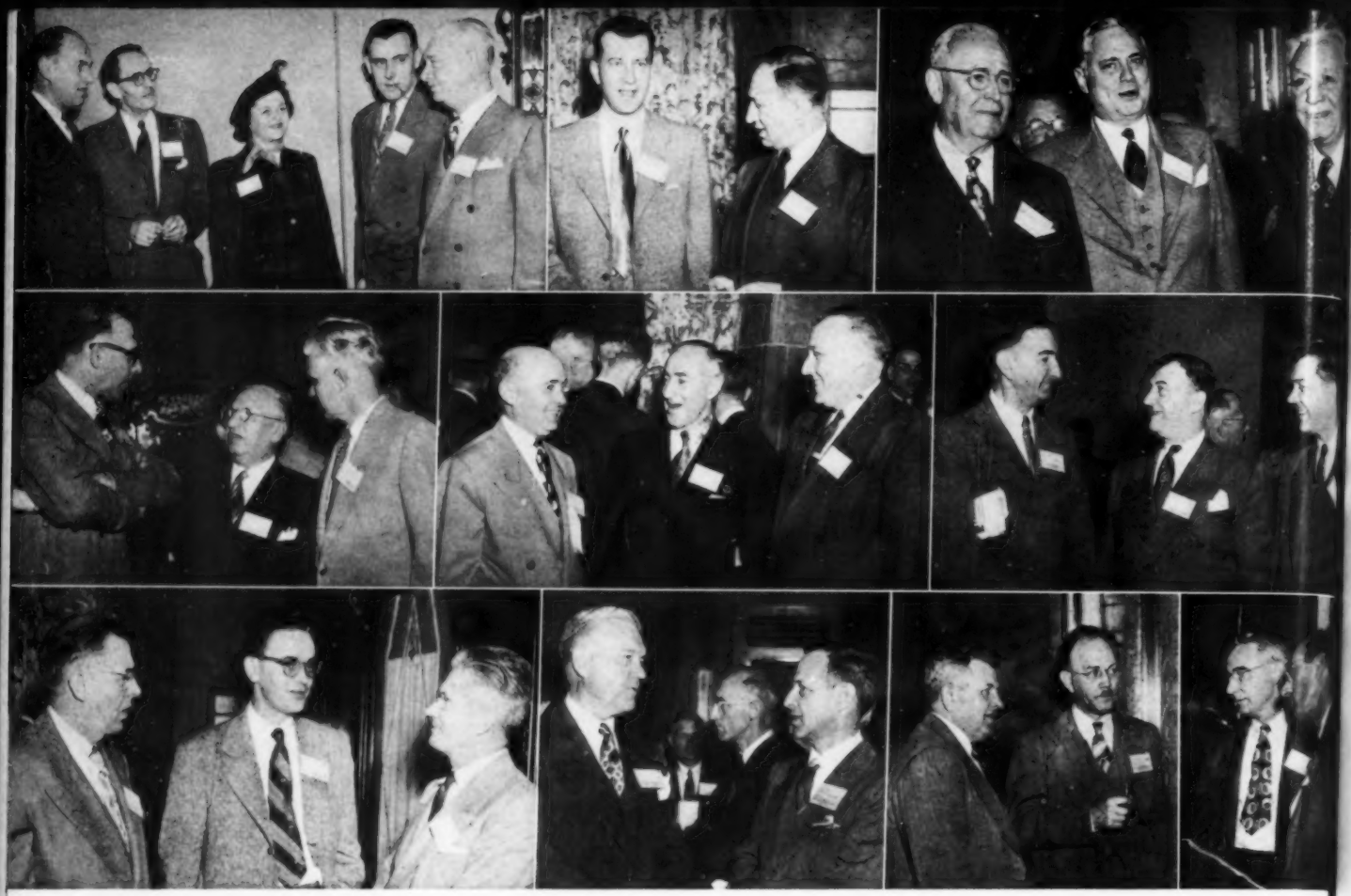
LEONARD J. OPPENHEIMER

Preston B. Heller of B. Heller & Co., Chicago, and John A. Rodda of U. S. Industrial Chemicals, Inc., New York, were elected to the administrative committee of the Insecticide Division. Reelected by this division were T. Carter Parkinson of McCormick & Co., Baltimore, chairman, James Green of Standard Oil Co. of Indiana, Chicago, vice-chairman, and A. C. Miller of Gulf Oil Corp., Pittsburgh, to the administrative committee.

Changes in the governing body of the Aerosol Division include the election of E. C. Young of Kinetic Chemicals Division of E. I. du Pont de Nemours & Co., Wilmington, as vice-chairman, succeeding H. R. Shepherd of Connecticut Chemical & Research Co., Bridgeport, who continues to serve on the administrative committee. John Brandenburg of Standard Oil Co. of Indiana, Chicago, was named to the administrative committee. The fifth member of the commitee, which includes H. E. Peterson of Continental Filling Corp., Danville, Ill., as division chairman, is T. B. Welsh of Gulf Oil Corp., Pittsburgh.

The Disinfectant and Sanitizers Division reelected all of its officers and members of the administrative committee.

Continuing to serve in official capacities, in addition to Mr. Oppenheimer, the president, are: first vice-president, Clarence L. Weirich, C. B. Dolge Co., Westport, Conn.; second



vice-president, Melvin Fuld, Fuld Brothers, Inc., Baltimore, program chairman for the meeting; treasurer, Peter C. Reilly, Jr., Reilly Tar & Chemical Corp., Tuckahoe, N. Y., and secretary, H. W. Hamilton, H. W. Hamilton Co., New York.

'51 Outlook Discussed

THE general economic outlook for business in the coming year, what lies ahead for the chemical industry in particular, do's and don'ts in bidding on government business, aerosol marketing, a review of the spray residue tolerance hearings of the Food and Drug Administration and the activities of the Select Committee to Investigate the Use of Chemicals in Foods (the Delaney committee) and suggestions on ways to overcome the problem of housefly resistance to insecticides were discussed fully by speakers at luncheon, general sessions and divisional meetings. Some attention was given to sales, sales training and merchandising, and the operation of the Federal Insecticide, Fungicide and Rodenticide Act of 1947 since its enactment was reviewed by W. G. Reed, Chief, Insecticide Division, U. S. Department of Agriculture. Production and Marketing Administration, Washington, D. C.

On the general economic outlook, Dr. Leo Barnes, chief economist of Prentice-Hall, Inc., New York, stated that in 1951 there will be more rearmament, more taxes, more inflation, more production, price, wage and manpower controls, less profits—but not much less—less consumer hard goods—but not too much less, more consumers' soft goods—but not too much more.

The chemical industry in the year ahead can expect: 1.) expansion of government controls, from the present stop-gap priority system, to complete supply allocations on scarce materials; some further advance in wage and other costs, even under a system of direct inflation controls such as must be expected eventually; 2.) a steadily accelerating shift from production for civilian uses to greater production for military requirements; 3.) a moderate decline in overall industry profits from the record 1950 level. These predictions were made by Dwight Moody, chemical editor of the New York *Journal of Commerce*.

The problems of the New York Navy Purchasing Office were discussed by Commander A. T. L. Fox, SC USNR, whose unit buys all the chemicals that the Navy requires, as well as the insecticide requirements of the Army, Navy, Air Force and Marine Corps. Commander Fox defined a bid as an "option given the Government, which upon acceptance by the Government, becomes a contract. Once the bid is opened it cannot be changed or modified and is public property," according to the speaker. Do's and don'ts of bidding listed by Commander Fox included: "Do read carefully the invitation to bid; do fully understand the specification; do raise any questions before the bid opens; don't bid on more than you can produce under delivery schedule requirements; don't bid unless your source of raw materials is definitely established."

In the discussion following his formal presentation, Commander Fox pointed out that his unit has the ad-

ministrative right to require performance bonds, if necessary. In the event a contractor defaults on a bid, the Navy readvertises the requirement of the defaulted material exactly as it was awarded to the defaulting contractor, making the award to the lowest bidder under the same conditions which applied under the original award. The difference in price between that of the defaulting bidder and the award made under the readvertisement is charged to the account of the defaulting bidder, the Commander pointed out.

On the question of Defense Order ratings, Commander Fox indicated that while all Naval orders bear a DO number, in bidding on government requirements it is better to have a source that can supply the raw material before bidding, than to bid and hope to obtain the material afterwards with the aid of the DO.

A list of chemicals and chemical specialties required by the government was read by Commander Fox. It included 287,600 pounds of steam cleaning compound; 144,000 pounds of scouring compound; 204,000 pints of metal polish; 1,470,000 pounds of laundry bar soap; 1,110,00 pounds of toilet soap; 524,000 pounds of grit soap; 63,000 pounds of low titre soap; 195,000 pounds of powdered hand soap; 1,800,000 pounds of soap powder; 60,000 gallons of sodium hypochlorite solution; 115,000 pounds of deodorant blocks; 1,150,000 pounds dishwashing compound; 536,000 pounds of 100 per cent DDT; 2,000 pounds of zinc phosphide, general control rodenticide; 32,500 pounds of grade B DDT insecticide concentrate powder; 32,000 pounds of DDT emulsion concentrate insecticide; 6,500 gallons liquid form disinfectant, germicide and fungicide; 16,270 gallons emulsifiable chlordane insecticide concentrate; 11,024 gallons emulsifiable lindane insecticide concentrate; 2,049,672 12-ounce aerosol insecticide dispensers containing .6% allethrin.

In discussing how publicity can be used in the aerosol industry, Maurice Mermey of Baldwin and Mermey, New York, stated that while the industry and its products have already received a considerable amount of spontaneous publicity, it should not depend upon the indefinite continuance of this type of publicity any more than the industry depends upon spontaneous sales. Mr. Mermey described the industry's publicity potentials as "great," advising that the aerosol sales story be told in terms of interest to women.

The meaning of the 1950 report on drug store trends to the aerosol industry was explained by Ray H. Haun, manager of sales development of *This Week Magazine,* while the future of cosmetics and drugs in the aerosol industry was outlined by Frazer V. Sinclair, president of Drug Markets, Inc., New York.

The introduction of a bill, sponsored by the Food and Drug Administration, which in effect would bring disinfectants and germicides un-

(*Turn to Page* 121)

New Methods of HOUSE FLY CONTROL in Dairy Barns

By David Pimentel, H. H. Schwardt, and L. B. Norton* Cornell University

DURING the 1949 and 1950 seasons, lindane was recommended for controlling house flies, *Musca domestica L.* in New York dairy barns. During the late summer of 1950 house flies somewhat resistant to lindane were found in the field. Laboratory studies showed that house flies could become highly resistant to lindane and other insecticides in as few as eight generations (unpublished data).

Analyses of milk from cattle in barns treated by the regular overall method in the summer of 1949 showed there was occasionally a trace of milk contamination (Pimentel et al, 1950). The need for better materials and methods of application was thus apparent, and a variety both of insecticides and of application methods were tested in 1950.

In preliminary tests in New York during the 1949 season treatment with a 2 per cent toxaphene spray mixture of spots in barns where flies congregated resulted in an average control period of 5.6 weeks which was comparable with that obtained using the overall method when the same total amount of insecticide was placed in the barns (Pimentel et al, 1950). It seemed probable, therefore, that satisfactory control might be obtained by selective methods of application with much less chance of milk contamination.

In 1950 two new treatment methods were compared with the overall spray method, using several new toxicants. Possible residues of toxicants in the milk from cattle housed in the treated barns were determined. Attention was also given the frequency and thoroughness of waste disposal in barns because of its probable connection with the period of control given by an insecticide.

Selection of barns.—The 117 barns treated were chosen at random within a 40 mile radius of Ithaca, N. Y. The treatment replicates were scattered at random so that no treatment was restricted to a particular locality. The variations in conditions between barns were as numerous as the barns treated.

Methods for Measuring Degree of Fly Control. — Fly counts were made by the Spot Counting Method. Because of the wide variation of total counts between barns an attempt was made by this method to describe the degree of control in three broad classifications rather than by exact fly counts. The term "good control" was used to describe a barn having no flies, or very few. "Partial control" was used for a barn which had a few flies but not in objectionable numbers and "no control" was used when the barn swarmed with flies. In the field both "good" and "partial" control indicated sufficient reduction of the fly populations to give satisfactory control of flies. For this reason the number of weeks of "good" and "partial" control given by the different replicates for each treatment were combined and then averaged. These averages represented the periods of effective control given by the toxicants tested. This method for measuring the degree of fly control in dairy barns was the same as that used during the 1949 season (Pimentel et al, 1950).

Statistical methods.—The significance of the data was tested using Students method with argument 't' as modified by Snedecor (1946).

House Fly Control Studies

SANITATION. — An experiment was designed to study the effect of waste disposal on the control of flies in dairy barns, both with and without insecticide treatment. A limited number of barns had waste disposal which was considered excellent. That meant that the barn yards were clear of any piles of decaying organic material, the gutters were cleaned daily or every other day and the calf pens were cleaned at least every four days. Of course, not every bit of manure was removed from these barns; on a busy dairy farm that is economically impossible.

Checks were made on the fly population in six such barns early in the fly season. It soon became apparent that waste disposal alone did not give satisfactory control of flies. Five of the barns were then treated with 2 pounds of lindane wettable powder by the overall method. The control period obtained after spraying these barns was compared with that obtained when barns with normal waste disposal were treated in like manner.

The period of effective control in the barns with good waste disposal was at least twice as long as that obtained in the barns with normal waste disposal (Table 1). From numerous field observations it can safely be estimated that only 5 to 10 percent of

* Before 22nd annual meeting eastern branch AAEE, Philadelphia, Nov. 20.

TABLE 1. The influence of farm sanitation on fly control in dairy barns with heavy fly infestations.

Number of Barns	Condition of Waste Disposal	Toxicant	Lbs. per 100 gals.	Formulation	Average Weeks Control	
					Good	Effective
5	Excellent	Lindane	2	Wp[1]	6.8 (3—9)	8.4 (7—10)
2	Excellent	Lindane	2	Wp	3+ (2—4+)	4+
16	Normal	Lindane	2	Wp	1.9 (1—4)	3.2 (1—6)

[1] Wp, wettable powder.

+ The exact duration of control period possible is not known because cool weather ended the fly season before control became ineffective.

the farms have waste disposal systems that can be rated as excellent. This emphasizes the need for education to help the farmer realize the importance of waste disposal in controlling house flies in dairy barns.

Development of resistance to lindane and toxaphene. — To determine if flies were developing resistance to lindane and toxaphene in the field, 22 barns treated in the 1949 season were treated again in 1950 with the same toxicants. The control periods obtained were then compared with those of a group of 20 barns which were treated with the same toxicants for the first time in 1950. Most of the barns treated for the second season with lindane had somewhat shorter periods of control than those treated only once, but the data were not consistent enough to show statistical significance. (Table 2).

TABLE 2. Average number of weeks of good and effective control with treatment of barns, one and two seasons with the same toxicant, with a heavy fly population and normal waste disposal.

Barns	No. of Seasons Treated	Toxicant	Lbs. per 100 Gals.	Form.	Treatment Method	Average Weeks Control	
						Good	Effective
4	1	Lindane	2	E[1]	Overall	3.8 (3—5)	6.0 (5—7)
6	2	Lindane	2	E	Overall	2.5 (1—5)	4.0 (1—7)
7	1	Lindane	2	Wp[1]	Overall	2.1 (1—3)	3.7 (2—6)
9	2	Lindane	2	Wp	Overall	1.7 (1—4)	2.8 (1—5)
5	1	Toxaphene	24	E	Spot	5.2 (2—8)	8.0 (5—9)
4	2	Toxaphene	24	E	Spot	5.0 (3—7)	7.3 (5—9)
4	1	Toxaphene	24 (8)[2]	E	Spot	3.3 (2—5)	5.8 (3—8)
3	2	Toxaphene	24 (8)[2]	E	Spot	3.3 (3—4)	8.7 (8—9)

[1] Wettable powder (Wp) and Emulsion (E).

[2] Additional treatment of the outside walls of these barns with 8 pounds toxaphene emulsion.

Since the field studies did not show a clear difference between one and two seasons of treatment, more sensitive laboratory tests were conducted on flies from the lindane treated barns. One hundred flies were collected from each of six barns which had been treated one season with lindane and a like number from each of six barns treated two consecutive seasons. The representative groups were allowed to pass through two generations, then 8,000 flies from each group were reared in the laboratory and the level of lindane resistance measured. A measure of the DDT resistance was also made to see if exposure for two seasons to lindane alone had affected the DDT resistance. A laboratory or non-resistant strain which has been maintained for a number of generations in the Cornell Insectory without exposure to any insecticide was used as a standard of comparison.

The laboratory tests showed no significant difference in the KD 50 on lindane between the groups of flies collected from barns treated one and two seasons with lindane (Table 3, Section I). Both field collected strains were about twice as resistant to lindane as the laboratory strain. There was not a significant difference in the KD 50 on DDT between the group of flies collected from barns tested one and two seasons with lindane (Table 3, Section II). Thus, it appears that two years treatment with lindane had no effect upon lindane or DDT-resistance in the field.

House fly migration may account for the lack of differences in lindane resistance of the flies from barns treated one and two seasons with lindane. The treatments were scattered at random over an area of about 4,500 sq. miles and barns with the same treatment were seldom close to one another. Further, the barns in this area were about one-half mile apart, allowing for easy migration and inter-

TABLE 3. The susceptibility of laboratory and field collected flies to DDT and lindane.

SECTION I

Strain	No. seasons treatment with lindane	Per cent lindane for a KD 50 in 12 hours	
		Male	Female
Field-collected "E"	one	.010	.046
Field-collected "F"	two	.0085	.045
Laboratory	..	.0036	.021

SECTION II

Strain	No. seasons treatment with lindane	Per cent DDT for a KD 50 in 12 hours	
		Male	Female
Field-collected "E"	one	1.2	5.2
Field-collected "F"	two	1.5	4.8
Laboratory	..	.098	.20

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TABLE 4. The average number of weeks of good and of effective control afforded by the overall method in barns with normal waste disposal and heavy fly infestation.

Number of Barns	Toxicant	lbs. per 100 gals.	Formulation	Average Weeks Control Good	Effective
6	Dieldrin	2	Wp[1]	2.5+ (1—4+)	4+
4	Toxaphene	8	E[1]	3.3 (1—4)	5.3 (3—7)
1	Toxaphene	8	E	4+	4+
10	Lindane	2	E	3 (1—5)	4.8 (1—7)
16	Lindane	2	Wp	1.9 (1—4)	3.2 (1—6)

[1] Wp, wettable powder E, emulsion.

+ The exact length of control period possible is not known because cool weather ended the fly season before control became ineffective.

breeding of flies from treated and untreated barns. This might in part explain the relative uniformity in level of insecticide resistance found within the area studied. Results from another study (Pimentel et al, in press) indicated that when flies were collected from three widely scattered counties in New York the level of DDT-resistance of the flies from these counties differed only slightly.

The level of lindane resistance shown by the strains of flies collected from the barns treated one and two seasons with lindane may not be attributable entirely to the lindane treatment. Laboratory studies now in progress show that a DDT-resistant strain of flies which was at least 10,000 times more resistant to DDT than the laboratory strain also exhibited a level of lindane resistance 10 times greater than the laboratory strain. This would strongly indicate that when flies become highly resistant to DDT they also show a resistance to lindane.

Overall Method.—As a check against the new spot and strip treatment methods, 30 barns were treated by the overall treatment method. This standard procedure entailed treating the entire inside surface of a barn except the floor. The toxicants used were dieldrin wettable powder, toxaphene emulsion, and lindane in both the emulsion and wettable powder formulations.

When spraying the barns by the overall methods the pump was set to deliver 350 pounds pressure, and the spray rod was directed over a surface until it was wet to the point of run-off. With this treatment, it was calculated that one gallon of spray mixture covered an area of 250 to 300 square feet, and a deposit of approximately 15 mg. of actual insecticide per square foot was obtained when one pound of insecticide was used in 100 gallons of water. The sprayer equipment and application rates were similar to those used in the 1949 season (Pimentel et al, 1950).

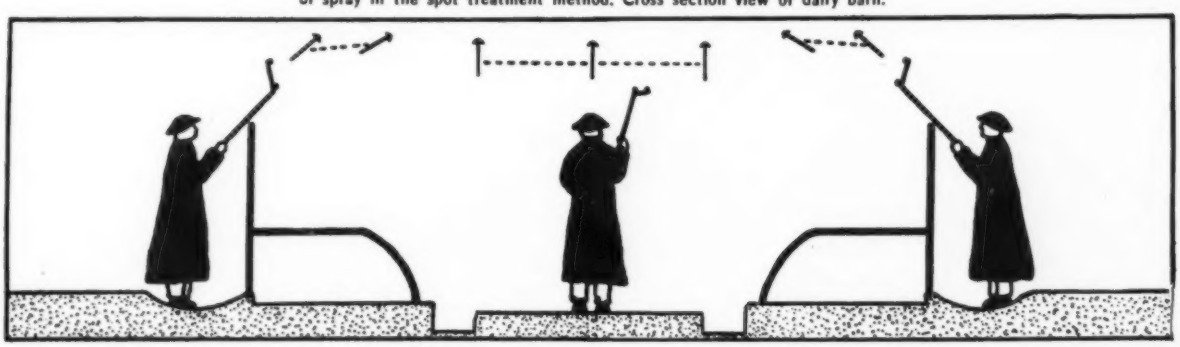
The overall treatment method with 2 pounds of dieldrin wettable powder, 8 pounds of toxaphene emulsion, or 2 pounds of lindane emulsion gave average periods of effective control of 4 to 5 weeks, with no significant differences between these toxicants. Two pounds of lindane wettable powder gave a significantly shorter period of control than the other three formulations (Table 4). Thus the lindane emulsion proved better than the lindane wettable powder, and substantiated the 1949 season's findings.

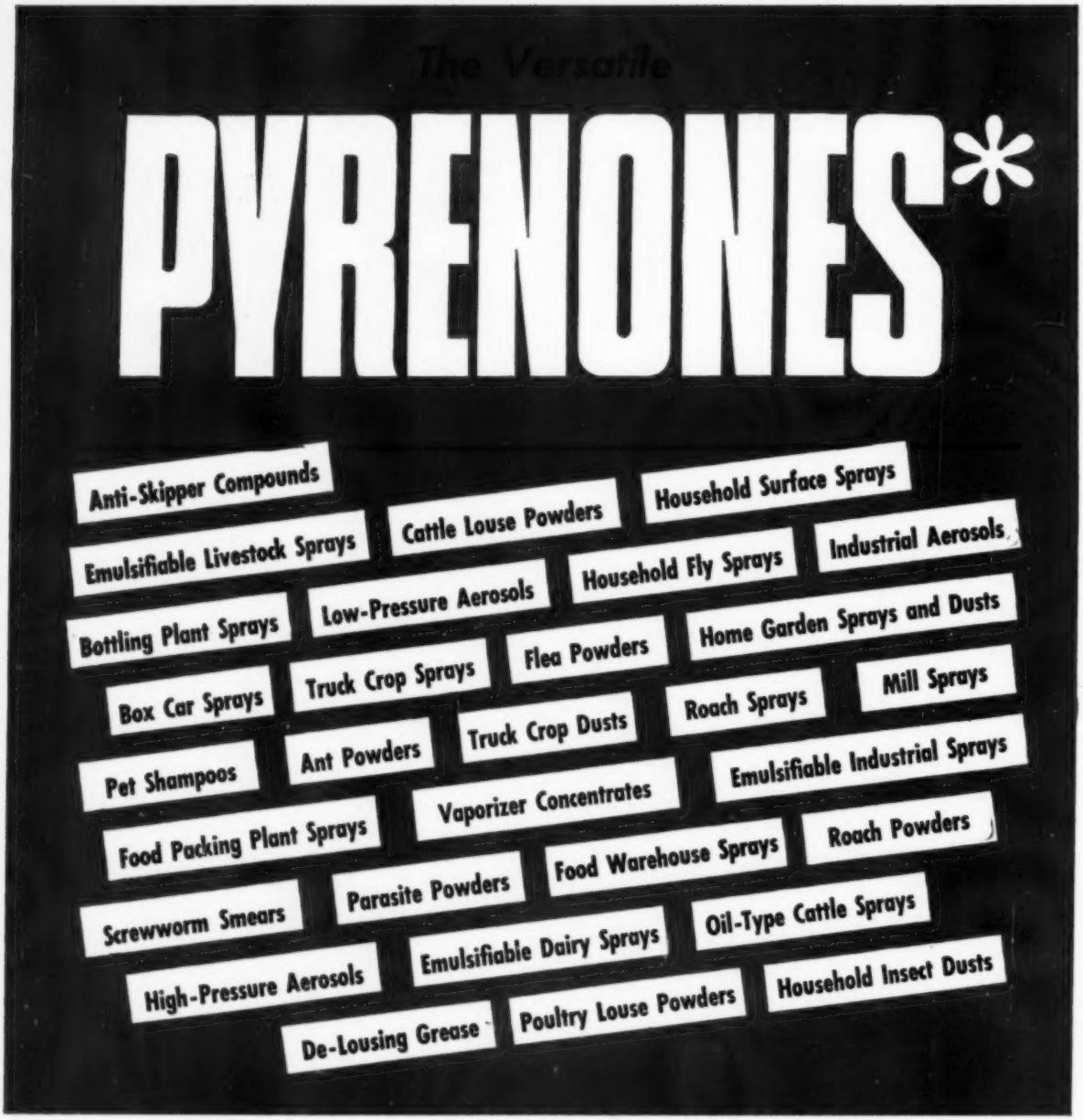
Results in the 1949 season indicated that slight though probably insignificant milk contamination was occasionally possible when barns were treated by the overall method. It was considered that additional milk analyses from this method of treatment would contribute no helpful information.

Spot Treatment Method. — Thirty barns were sprayed using the spot treatment method. In 1949, the spot treatment entailed treating the places where flies were most likely to rest in the barn, and included areas around the calf pens, the stanchions, windows, doors, manure conveyor tracks, electric wires and bulbs, and all objects in the barn where a heavy concentration of fly specks was observed. (Pimentel et al, 1950). In 1950 this method was modified to prevent any toxicant from drifting into the mangers. Only the center area of the barn ceiling and areas around the calf pens were treated (Figure 1). The same spray equipment and rate of application were used in the spot method. The spot method required only half the time taken to treat a barn of similar size by the overall method. Because the spot treatment method used 1/3 to ¼ as much spray

(*Turn to Page* 112A)

Figure 1. Positions of the spray operator and the movement and direction of spray in the spot treatment method. Cross section view of dairy barn.





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AEROSOL VALVES

By Wainwright Tuttle*
Bridgeport Brass Co.

A MODERN aerosol-type package consists of three basic elements: the formulation, the container, and the valve. The use of certain refrigerants made formulations practical; the adaptation of low-cost expendable metal cans made the container practical, but the low-cost but fully accurate and dependable valve had to be developed.

The conditions to be met were difficult, including—

1. Loss of volatiles only a few grams per year,
2. Loss of heavy oils almost zero,
3. In operation, a very small rate of flow with minimum clogging tendency,
4. A metering accuracy of 25%,
5. Aerosol size particles with a low-pressure propellent,
6. Self-reclosing, or push-button operation,
7. Upward or downward spraying,
8. High cost-efficiency.

The earlier types of packages engineered during the last war naturally employed valves which were closely related to existing designs for other purposes such as tire valves or standard screw valves, but these were not entirely satisfactory in respect to cost, performance, or dependability.

Under these circumstances, the problem included the important reduction of cost, better performance, and higher dependability. Obviously, that is a large order, but the solution of these problems was essential to make possible the more efficient low-pressure package with the can-type container.

The dictionary describes a valve as: "A contrivance or arrangement that is used to open or close a passage to permit or stop the flow of a liquid, gas, vapor or loose material." An aerosol-type valve is actually much more than this. It also conducts the liquid from the bottom of the container to the actual valve, preventing the escape of the gas alone; it acts as a valve as defined; it transmits the operating motion to the valve without leakage; it reduces the flow to a very small rate; it regulates this small flow accurately; it causes the fluid mixture and the liquefied compressed gas to change into a mixture of finely divided liquid and gas, and it causes this mixture to discharge into the atmosphere so that the suspended particles in the air are in a certain size range effective for the purpose intended.

May I digress at this point to suggest that the term "valve" for aerosol-type packages be replaced by the term "eductor" since valving is only one of the seven functions of this portion of the package. The whole system by which the fluids are "led out" can be called the "eductor," as defined by the dictionary.

The valving part of this desired result, however, is the most difficult to achieve on an economical basis. It is often said that absolutes do not exist in nature. Yet the requirement to "stop" the flow is almost absolute. The purpose of the package will not be achieved commercially unless the valve can, in every case and in every package, stop the fluid so completely, by merely releasing the manual operating motion, that no more than a few grams per year can escape. Further, only a fraction of a gram per year of the oily portion of the contents can be permitted to escape. Another difficult phase was elimination of excessive spray rate and particle-size variation.

These problems have been solved by the industry in the past few years. Today, there are several eductors in quantity production meeting all of these rigid requirements with a cost-efficiency which begins to approach the cost-efficiency of the can-type steel-pressure container.

Insecticides First Aerosols

THE aerosol industry began with the insecticide. With greater or less success, it is introducing a number of new applications for this type of package. At first, the applications were limited by the appropriateness of the aerosol-insecticide type of eductor. However, the need for other types of eductors for distinctly different purposes has led to many new types including those for paint, for whipped cream, and others, The ideal solution of each of these problems involves

The aerosol valve, a basic element in the aerosol package, had to be developed especially for the task. Besides being dependable and fully accurate, its cost had to be low for the can type aerosols.

* Presented at 37th annual meeting, Chemical Specialties Mfrs. Assn., New York, Dec. 5, 1950.

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different constructions. A better paint eductor, for instance, might shut off at the final orifice; a better whipped-cream eductor might do likewise. It might also purge the container more thoroughly of cream before the unmixed gas escapes; while an eductor for aqueous mixtures might operate without gas expansion.

There is still some room for higher cost-efficiency in the eductors. They are still costly in comparison with the containers. However, further reduction in eductor cost would not affect the overall cost of aerosol packages nearly as much as the perfection of lower-cost propellent systems. If such systems are not possible, then present packages can be reduced in cost only slightly, and the growth of sales volume cannot be as great as it would be if the cost of self-dispensing packages for many products could be justified by convenience alone in comparison with non-pressurized packages. Under present cost conditions pressure packages must provide convenience *and* at least one other big advantage over non-pressurized products for the same purpose.

The production of the extremely fine true aerosol particle justifies the cost of aerosol insecticides and aerosol deodorants, but this advantage is not present in many other products which must compete with ordinary packaging on the basis of greater convenience alone.

The whipped-cream package has shown the way. Primarily it provides convenience. Its retail price probably indicates approximately how much extra the consumer will pay for convenience.

This point of view is given to suggest that close cooperation between eductor research and propellent research may result in packages of radically lower cost for many purposes and a consequent expansion of the industry.

With regard to some of the details of eductor development, mention can be made of the fact that practically all valves depend on the use of a non metal at the actual shut-off point. Since low-cost parts cannot be very perfect geometrically or in surface, it is customary to mate a metal part and an elastomer so that the irregularities of the metal parts are filled in by the softer material each time the valve closes, thus avoiding the necessity for nearly perfect guiding and nearly perfect surfaces.

Elastomers for Valves

ELASTOMERS may be divided into rubbers and other types, the latter mostly related to plastics. Rubbers, both natural and synthetic, have far higher elasticity than the others. They have been employed for aerosol eductor valve seats in most cases. However, many desirable formulation components cause serious swelling and deterioration of the best synthetic rubber available. The less elastic plastic elastomers can be used if mating surfaces are so guided that reseating takes place each time in exactly the same relative position of parts. This also requires that the initial seating force per unit area of the elastomer be greater than the resistance of the elastomer to permanent deformation so that the irregularities of the metal part are reproduced in the elastomer. The area of contact must increase until further deformation ceases.

Extension of this principle may permit the development of an all-metal valve for resistance to organic solvents.

However, there are now elastomers which resist practically all useful formulation components so that the all-plastic valve with its better resistance to corrosion may have wider application. One thing is fairly certain, i.e., that there will be increased specialization in packages; containers, eductors, active ingredient formulations and propellent systems will be tailored specially for each different product as the normal result of competition in performance, appearance, and cost efficiency. There is a great deal of intensive aerosol package development needed on many applications, and designs which are entirely satisfactory will continue to be rather rare.

Finally, a few notes about military aerosol packages are appropriate. Eductors which are more rugged than some present types are needed to withstand field conditions. A number of different types of military aerosol insecticide packages are being considered, and pressure package applications other than insecticide may be developed by the industry.

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Synthetic Fungicides

Tests on the thiocarbamic acid derivatives as fungicides indicate that these derivatives are effective as dusting powders and liquid sprays, and have good wetting and adhesive properties. Certain esters of the triaryl phosphate series provide good synergistic action when incorporated in these formulations. The main esters used are tri-cresyl phosphate and triphenyl phosphate. Toxicity to men or animals is relatively low, but prolonged inhalation of the spray drift or dust is to be avoided. *Chem. Age* 43, No. 1631, 540 (1950).

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Corrosion by Insecticides

Studies of the corrosive effect of insecticide solutions indicate that 2,4-D inhibits corrosions; DDT solutions tend to inhibit corrosion; and chlordane is a corrosive acid insecticide. Stainless steel is resistant to all insecticide solutions, and aluminum provides a satisfactory resistance to all of the insecticides but the sodium arsenite solutions. Metals tested included brass, copper, aluminum alloy, magnesium alloy, cold rolled steel, and galvanized iron. These were immersed in insecticidal solutions for a period of eight weeks, with periodic examinations for corrosion. The most corrosive insecticide solutions of those tested were chlordane in water, sodium arsenite in water, and DDT in salt water. Nat'l. Assoc. Corrosion Engineers, 1950 meeting.

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Odorless BHC

The odor of benzene hexachloride, due to the addition of chlorination of benzene, is improved by treatment with nitric acid of at least nitrating strength. In an example, crude coarsely ground benzene hexachloride is added to .7 to 2 times its weight of nitric acid of specific gravity 1.4, and the suspension is boiled for two hours. The product may be used in pest-control compositions. Brit. Pat. 586,434.

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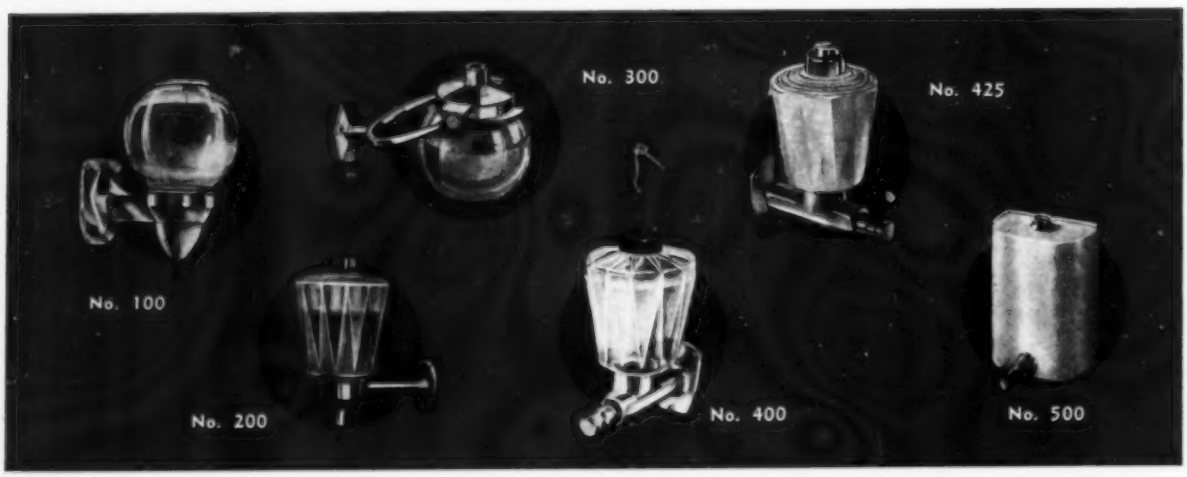

Warfarin Progress Report

By Friar Thompson*
Prentiss Drug & Chemical Co.

FROM September 1949 until July 1950, compositions containing warfarin in a concentration of .5% were sold under an experimental permit issued by the U. S. Department of Agriculture, Production and Marketing Administration. Permits for the experimental sale of such compositions were issued to Prentiss Drug & Chemical Co., and S. B. Penick & Co.

These two commercial companies inaugurated an experimental sales program to Public Health officials, Fish and Wildlife personnel, industrial sanitary engineers, pest control operators and other qualified personnel, under which sales were made with the understanding that the persons using the warfarin would report the results obtained to either the U. S. Fish and Wildlife Service, to National Pest Control Association or to one of the companies which had sold the warfarin concentrate.

Some of these tests involved treatment of large areas for rats or for rats and mice. These included the Alexandrian and Black rat as well as the Norway rat. A general summary of this information has been compiled by Dr. D. Glen Crabtree of the U. S. Fish and Wildlife Service, Denver, and will probably be published in the very near future.

Inasmuch as the data summarized by Fish and Wildlife, National Pest Control Association and S. B. Penick & Co. closely approximates the summary compiled by Prentiss Drug & Chemical Co., I will give the results obtained by Prentiss more or less in detail. We received 234 individual reports from 38 states including the District of Columbia and also reports from Sweden, Hawaii and England. The reports included 66 combination infestations of rats and mice; 146 infestations of rats alone and 27 infestations of mice alone. 47 different types of establishments were treated.

Agricultural establishments included general farms, as well as specialized farms such as dairy farms, horse farms, poultry farms and livestock farms. 51 individual establishments of this kind were included in the report. Under residential types of establishments we included apartment houses, hotels, golf clubs, etc.; 46 individual cases were treated in this classification. 31 different types of industrial sites were treated, in which there were 129 individual treatments. Institutional sites such as armories, schools, etc., were also included and 10 of these cases were reported.

The warfarin concentrate seems to lend itself to an extremely wide range of baits—approximately 60 different types of food materials were mixed with the warfarin concentrate at the rate of 19 to 1, but of these 60 types, corn meal or mixtures of corn meal and some other material were predominantly used.

On a basis of these individual reports, the degree of control obtained was graded on the basis of satisfactory to complete control; unsatisfactory and indeterminate. 89.1% of the reports received reported satisfactory or 100% control. 1.67% reported unsatisfactory control and 9.23% reported indefinite or indeterminate. An analysis of the unsatisfactory and indeterminate reports showed definitely that directions were not followed correctly, or else the degree of infestation was of such a nature that a continuous supply of vermin was available to replace any rodents that were killed. All these unsatisfactory or unsuccessful attempts reported were followed up and in practically every case emphasis on the directions or the evaluation of the problem resulted in satisfactory control.

All of the data were summarized and in late June of 1950 the Production and Marketing Administration allowed the warfarin rodenticides to be offered for sale to the general public. It is too early to evaluate the results from the consumer sales program as it has been less than six months since the material has been offered for sale. But at present warfarin type rodenticides in the form of .5% powder or in the ready-to-use bait are being offered over the entire United States and are generally available to distributors and dealers now. Reports from manufacturers, packing warfarin concentrates under trade mark labels for consumer or farmer use, indicate that the material is moving off the dealers shelves and that the farmers and householders are using the product with considerable success.

Sale surveys have indicated that in developing the farm market for rodenticides in the past, the farmer in most cases has to look to the rural drug store as a source of supply for his rodenticide. The members of this group supply the farmer with many types of material and warfarin rodenticide seems to be a "natural" for the rural drug store and farm trade.

Many rodenticides have been offered and sold from time to time with indefinite success, and in many cases outright failure. From the results obtained in the experimental sales program and the preliminary results in the general sales today, indications are that warfarin type rodenticides are the real answer as the active ingredient for the production of proprietary compounds for rat and mouse control.

* Before scientific section, Proprietary Assn., New York, Dec. 7, 1950.

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TABLE 5. The average number of weeks of good and of effective control afforded by the spot treatment method in barns with normal waste disposal and heavy fly infestation.

Number of Barns	Toxicant	lbs. per 100 gals.	Formulation	Average Weeks Control: Good	Average Weeks Control: Effective
6	Dieldrin	8	Wp[1]	6.2 (5—8)	10.3 (9—12)
8	Chlordane	24	E[1]	5.4 (1—9)	7.6 (3—12)
9	Toxaphene	24	E	5.1 (3—8)	7.6 (5—9)
7	Toxaphene	24 (8)[2]	E	3.3 (2—5)	7 (3—9)
8	Lindane	8	E	4.1 (2—7)	6.6 (5—10)
1	Lindane	8	E	3	5+

[1] Wettable powder (Wp) and Emulsion (E).
[2] Additional treatment of the outside walls of the barns with 8 pounds.
+The exact length of control period is not known because cool weather ended the fly season before control became ineffective.

Fly Control Methods

(*From Page 105*)

mixture as was applied by the overall method, concentrations of the toxicant were increased to place as much material in the barn as the overall method did. The toxicants used were dieldrin, chlordane, toxaphene and lindane.

The average periods of good and effective control provided by the spot treatment method are presented in Table 5. Spot treatment of barns with 24 pounds of chlordane emulsion, 24 pounds of toxaphene emulsion, or 8 pounds of lindane emulsion per 100 gallons of water gave periods of effective control averaging about 7 weeks, with no significant differences between these treatments. With 8 pounds of dieldrin wettable powder effective control for 10.3 weeks was obtained. This was significantly longer control than that given by the other treatments. The average periods of effective control given by dieldrin, toxaphene, and lindane applied by the spot treatment method were at least comparable to those given by the overall method when comparable amounts of insecticide were used. Treatment of the outside barn walls with 8 pounds of toxaphene per 100 gallons of water did not increase the period of control already afforded by spot treatment inside with 24 pounds of toxaphene emulsion (Table 5).

Twenty-four hours before and forty-eight hours and one week after treatment, a pint sample of morning milk was obtained at random from large milk cans (100 pounds capacity). The Frawley Davidow (1949) method as modified by Kimball and Tufts (1950) was employed for analyzing milk for lindane residue. Total organic chloride analysis was used to detect any possible contamination by dieldrin, chlordane and toxaphene. No significant amounts of dieldrin, chlordane, toxaphene or lindane was found in the milk. (Table 6). The significance of a single 48 hour sample of milk from a barn treated with dieldrin, and which was slightly above the .5 ppm level of significance, is doubtful. The results of the milk analyses together with the lengths of the control periods obtained indicated that good control can be obtained without milk contamination when barns are carefully treated with sufficient amounts of any of these toxicants by the spot treatment method.

Strip Method

STRIP METHOD. — This new method of spot treatment was based on studies of the habits of house flies in both the laboratory and field. Flies noticeably preferred the edges of boards, electric wires, strings, small pipes and other narrow objects as resting places. They were observed to select a screen surface in preference to one of wood, glass, or metal. Wire screen strips placed close to the ceiling of a room proved particularly attractive as temporary resting places.

Preliminary tests with strips of screening treated with toxicants proved highly promising. An important feature of the screen strips was the fact that flies, whose legs were partially paralyzed from the effects of the toxicant, could cling to the screen surface until they received a lethal dose of the toxicant. Affected flies usually slipped off the other materials tested before they could receive a lethal dose.

Further preliminary experiments with the strips entailed tests to select a highly toxic, non-repellent insecticide, and dieldrin appeared to fulfill these requirements. To test whether flies would rest on dieldrin treated strips of their own accord and remain long enough to receive a lethal dosage, strips were treated with 15 per cent dieldrin stapled two feet apart on the ceiling of a room (8 ft. x 15 ft. x 20 ft.) and 20,000 flies were released in the room. All of the flies were dead within 12 hours. On the basis of these preliminary tests, the strip method was tested in barns using several toxicants.

To make the strips, 100 foot rolls of galvanized screening, 18 x 14 meshes per square inch, were sliced into narrow rolls containing 100 feet of wire ¾ inch wide. (See Fig. 2.) The

TABLE 6. Analyses of milk from cattle in barns treated by spot or the strip methods.

Toxicant	Concentration	Method of Treatment	No. Barns	Toxicant* parts per million: Avg. 48 hrs.	Max. 48 hrs.	Avg. 1 wk.	Max. 1 wk.
Dieldrin	8 lbs./ 100 gals. water	Spot	6	.14	.58	0	0
Chlordane	24 lbs./ 100 gals. water	Spot	6	.07	.34	.04	.18
Toxaphene	24 lbs./ 100 gals. water	Spot	6	.11	.42	.07	.43
Lindane	8 lbs./ 100 gals. water	Spot	6	—.02	.05	.01	.05
Lindane	15 per cent concentrate	Strip	4	—.05	.05	—.02	0

Note: Minimum significant concentration is .5 ppm for the total chloride method
Minimum significant concentration is .2 ppm for the lindane method.

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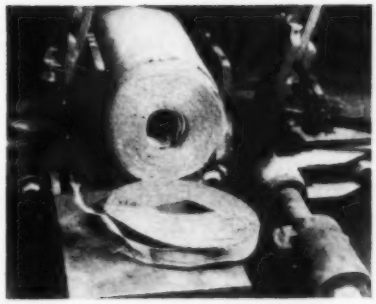

Figure 2. Cutting three quarter inch slices from roll of window screening to make strips 100 feet long.

Figure 3. Dipping rolled strips in insecticide concentrate.

Figure 4. Attaching treated strip to barn ceiling with pistol type stapler.

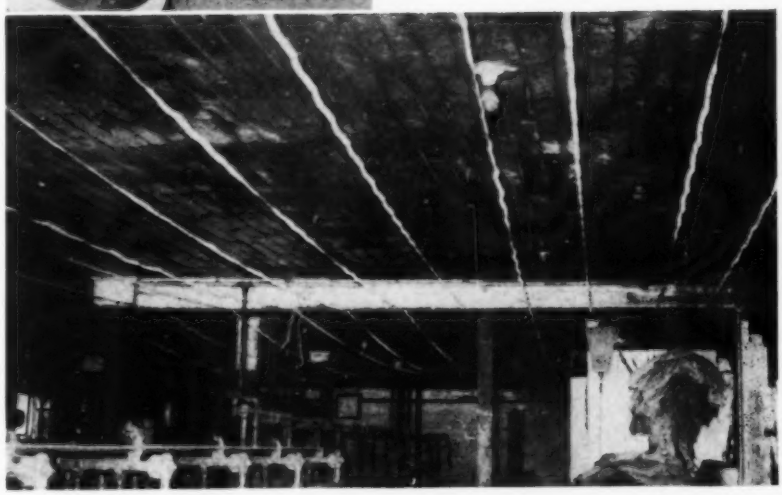

Figure 5. Treated strips installed in barn.

rolls of strip were first dipped into the emulsifiable concentrate and then laid on end to dry, allowing the small meshes to hold a maximum amount of the concentrate. (See fig. 3.) When the treated rolls of strip had dried completely the strips were coated with either crystals or a sticky brown layer, depending on the toxicant used. These treated strips were stapled one foot apart on the ceilings of 27 dairy barns (figures 4 and 5). Dieldrin was the first material applied to the strips, but when dieldrin treated strips had given exceptional control of flies, chlordane, toxaphene and lindane emulsifiable concentrates were tested. The strip method used only one-half the amount of insecticide used in the overall method and spot method.

Twenty-four hours after the strips were placed in a dairy barn heavily infested with flies, the fly population was reduced about 80 per cent. Within 48 hours after treatment started, the control of flies was judged excellent with all of the insecticides tested. The average periods of good and effective control provided by the strip method are presented in table 7. Strips treated with 15 per cent or more chlordane, toxaphene or lindane emulsifiable concentrates gave average periods of effective control ranging from 4.5 weeks to 9 week plus. These control periods were at least equal to

(*Turn to Page* 141)

TABLE 7. The average number of weeks of good and of effective control after treatment of barns by the strip method.

Toxicant	*Per cent Concentrate*	*Number of Barns*	*Waste Disposal*	*Fly Pop.*	*Average weeks control*	
					Good	*Effective*
Dieldrin	15	6	Normal	Light	16+	16+
Dieldrin	15	1	Normal	Heavy	13	16+
Dieldrin	15	4	Normal	Heavy	8+ (6+—12+)	8+ (6+—12+)
Chlordane	20	1	Normal	Heavy	1	2
Chlordane	40	3	Normal	Heavy	4.3 (2—7)	9+ (7—10+)
Chlordane	60	1	Normal	Heavy	8+	8+
Toxaphene	40	4	Normal	Heavy	3.3 (1—7)	8.3 (7—10)
Lindane	15	4	Normal	Heavy	2.8 (1—4)	4.5 (4—5)
Lindane	20	4	Normal	Heavy	2.5+ (2—6+)	5.5+ (5+—6+)

+ The exact length of control period possible is not known because cool weather ended the fly season before control became effective.

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KRANICH SOAPS

AAEE Is Told of New Insecticides

Economic Entomologists meeting in Denver hear reports on allethrin in aerosols, a review of the spray residue tolerance hearings and insecticide resistant flies

NEW developments in insecticides were among the subjects discussed at the 62nd annual meeting of the American Association of Economic Entomologists, which met jointly with the Entomological Society of America, Dec. 18-21, at the Cosmopolitan Hotel, Denver.

Two papers dealing with insecticide resistance of houseflies were presented, following up the discussion at last year's meeting and a review of the Residue Tolerance Hearings by Bernard D. Levinson, Federal Security Agency, Washington, D. C., presiding officer at the hearings, were among the highlights of the phase of the program devoted to insecticides. Also of considerable interest were papers on "Allethrin in Aerosol and Solution Sprays" by Harry L. Haynes, Boyce Thompson Institute for Plant Research, Inc., Yonkers, N. Y., and another, "Piperonyl Butoxide and Pyrethrins in Protectants for Stored Product Insects" by Walter E. Dove and Carl N. Watts of U. S. Industrial Chemicals, Inc., Baltimore. "Pyrethrum Insecticides for the Control of Biting Flies" is the title of a paper presented by W. S. McGregor of the Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture, Kerrville, Tex.

Roy E. Campbell of the U.S.D.A., Alhambra, Calif., A.A.E.E. vice-president, was elected president, succeeding Dr. C. O. Clausen, also of the U.S.D.A. Charles E. Palm of Cornell University is the new vice-president, succeeding Mr. Campbell, and Ernest N. Cory of the University of Maryland, College Park, continues as secretary.

In the paper "The Nature and Causes of Housefly Resistance to DDT," A. S. Perry of the University of California, Berkeley, pointed out that all strains of houseflies investigated can change DDT into DDE, but the process proceeds much further in resistant strains. This is not the secret of resistance, however, since large amounts of unchanged DDT may be stored in the bodies of resistant flies. Also, part of the absorbed DDT is changed into an unidentified form. Various synergists overcome resistance in part by interfering with the conversion to DDE.

"The Status of Insecticide Resistant Houseflies in Southern California" was covered in a paper of that name by Ralph B. March and Robert L. Metcalf of the University of California Citrus Experiment Station, Riverside. They point out that housefly resistance to insecticides continues to increase in the field in southern California. They reported that laboratory and field studies were continued to determine the fundamental basis for this resistance and to find substitute control measures.

In his paper on allethrin in aerosols, Mr. Haynes pointed out that Peet-Grady tests on the common house fly demonstrate that allethrin is as effective as pyrethrins. Results with synergists were also reported. Synergist 264 activates allethrin as well as pyrethrins, the author found. The two materials were compared in aerosol formulations containing DDT and synergists against house flies and American roaches.

Methods are listed for evaluating protectants on grains and seeds for the purpose of preventing the development of commonly found insects in the paper by Dove and Watts. A summary of the results of practical tests made under a wide variety of conditions was reported.

McGregor, in his paper "Pyrethrum Insecticides for the Control of Biting Flies" reported that laboratory and field tests made against horn flies, stable flies and horse flies with pyrethrum combinations using anti-oxidants and synergist combinations with para-aminophenol and tall oil showed that they were equal or superior to combinations containing commercially available synergists.

◆

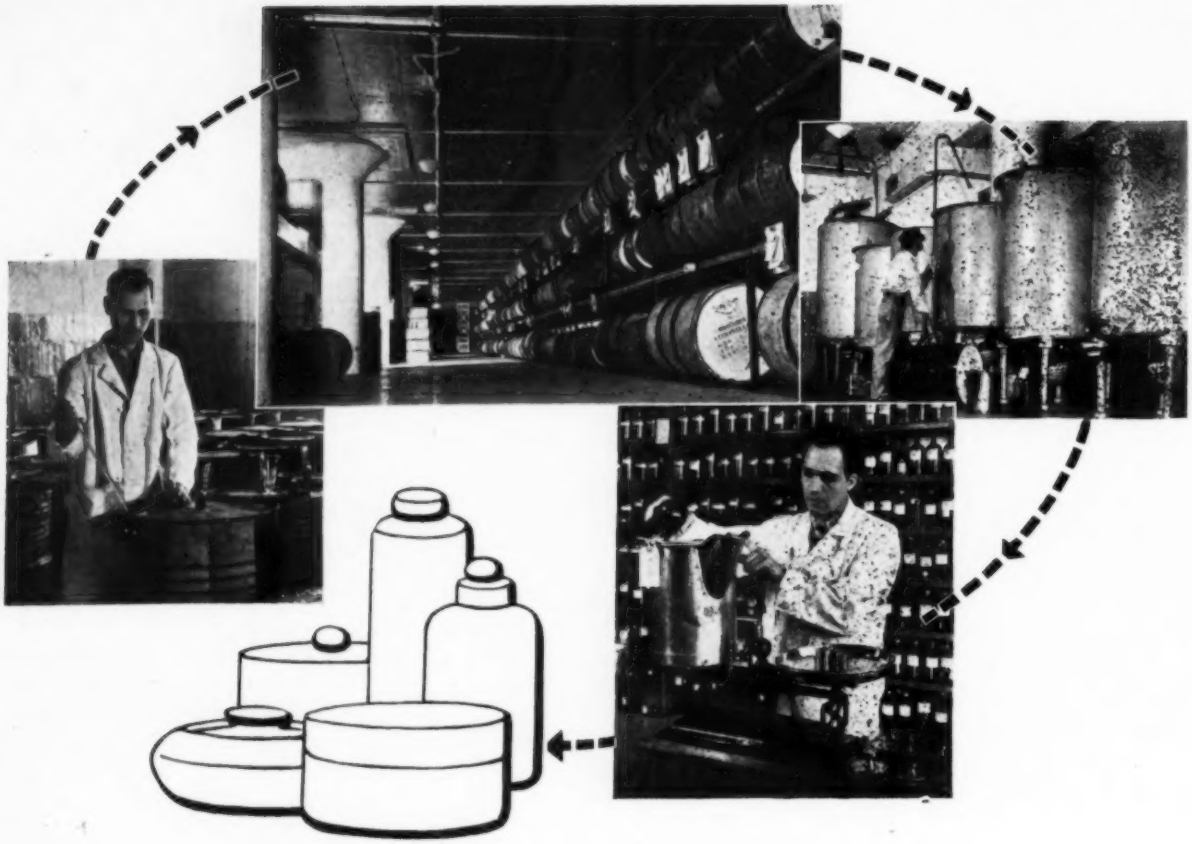
British Fair Apr. 30-May 11

Britain's annual industrial show, the British Industries Fair, will be held in 1951 from April 30 through May 11, it was announced recently.

◆

Perkin Medal to Howard

Henry Howard, long prominent in the American Chemical industry and for 22 years chairman of the executive committee of the Manufacturing Chemists' Association, has been selected to receive the 1951 Perkin Medal, it was announced recently. The medal will be presented to Mr. Howard in New York on April 27. The 1951 recipient was for 32 years connected in various capacities with Merrimac Chemical Co., Everett, Mass., now part of Monsanto Chemical Co., St. Louis. In addition, for 10 years subsequent to that he was successively director of new products department, director of research and development and consultant to Grasselli Chemical Co., now part of E. I. du Pont de Nemours & Co., Wilmington, Del.



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Contact Rodenticide

A contact rodenticide, Gix, of which the active ingredient is difluorodiphenyl trichloroethane, has been found effective in the control of rats and mice. A single oral dose of 480 mg./kg. was required for an LD_{50}, while a continued daily application of 72 mg./kg. was required for an LD_{50}. *Arch. exptl. Path. Pharmakol.* 210, 71-90 (1950).

Shampoos

(*From Page* 41)

sodium stearate as the opacifying cream-forming agent. A like opinion is expressed by DeNavarre(36) in the observation that in solid cream shampoo, the fatty alcohol sulfate paste still gives maximum lather and sodium stearate continues to be the best stabilizer. The formulation of such shampoos is well illustrated by Pantaleoni and his associates(21) in the following combination:

	parts
Fatty alcohol sulfate ("Duponol" WA paste)	50
Sodium stearate	8
Water	41
Lanolin	1

The ingredients are heated together with constant stirring to approximately 85°C. When homogeneous, the mixture is cooled slowly with stirring. Perfume may be added while the shampoo is still molten (e.g. 45°.).

Of course other types of detergent and additives may be used in the production of cream shampoos. It has been observed(20) that one of the chief advantages of these newer types of products is that their excessive defatting or drying action can be offset by the inclusion of emollients and conditioners. Most of the additives mentioned in connection with liquid shampoos are also valuable for use in the paste cream type products. Morel(32) states that a proportion of humectant, such as glycerine, sorbitol or the like, is also normally desirable but should not exceed four or five per cent. These agents also help to keep the finished product stable and of uniform consistency over a reasonably wide range of temperatures. In his opinion, the formulator should aim at producing a shampoo that is stable on storage, non-irritating, pleasantly perfumed, attractive in appearance, reasonably inexpensive, as simple as is technically possible, of correct consistency, and, above all, completely satisfactory as a hair and scalp cleaner.

Cream Shampoo Materials

A WIDE variety of raw materials is available for the manufacture of cream shampoos. For this reason, formulations will vary quite considerably, depending on the materials used. Hence basic procedures are usually given(9, 16) in broad general terms. However, as shown in the reports by Beach(31) and by deNavarre,(37) raw material manufacturers do provide more or less specific formulas. Thus a frequently cited(20, 32, 38) method for making a cream shampoo calls for the use of a complex colloidal magnesium aluminum silicate known commercially as "Veegum" (R. T. Vanderbilt Co., New York). The product is made by blending the following ingredients together with mild heating:

	parts
Sodium alkyl sulfate paste	37.0
"Veegum" gel	42.0
Glyceryl monostearate	1.0
Stearic acid	18.5
Triethanolamine	1.5

Cream shampoos of the mixed type are also quite feasible. This is shown in the following formula offered by Jannaway as a guide to the compounder:

	parts
Coconut oil (good grade)	7
Coconut oil fatty acids	14
Stearic acid, triple pressed	14
Caustic potash	sufficient
Glycerine or substitute	2
Synthetic detergent (e.g. fatty alcohol sulfate)	3
Perfume (floral type)	1
Water, to make	100

Perhaps more specific is the shampoo cream formula cited by Morel,(32) as follows:

	parts
Oleic acid	9.3
Coconut fatty acids	6.7
Triethanolamine	9.0
Alkyl aryl sulfonate ("Santomerse" No. 3 paste*)	25.0
Perfume	1.5
Water, to make	100.0

(*Monsanto Chemical Co., St. Louis, Mo.)

The coconut-oleic-triethanolamine soap is first made separately and then mixed with the synthetic detergent, water and perfume.

Aerosol Shampoos

THE newest additions to the cream shampoo line are, of course, the products dispensed in low pressure aerosol containers. In addition to the products already being sold on a national scale, other companies are contemplating the distribution of these convenient packages which provide ready-made lather. As noted in a recent discussion,(39) the formulation of a shampoo for an aerosol type container poses a number of problems. One of the most important is corrosion, which raises havoc with both the valve and the can. Filling also requires special consideration because it is not possible to employ the conventional method of chilling both the active ingredient and the propellent and adding them separately before capping. To circumvent this problem, the shampoo is added to the can at normal temperature, the container is capped, and the propellent is forced in through the valve.

Although not much specific information is available on formulas, it is known that less propellent is required as compared with other types of low pressure propelled products. It is said that active ingredients suitable for making conventional cream shampoos can also be used as bases in formulating the new ready-foamed products. The inclusion of a high proportion of emollients, particularly lanolin, is also possible.

The jell-type of shampoo based on synthetic detergents has attracted considerable attention and at least one well-known brand is of this type. Hilfer(16) attributes this interest not only to the novel appearance of these products but also to their ease of use from a collapsible tube. He points out that a large variety of materials may be used in their preparation. For example, a mixture of equal parts of triethanolamine lauryl sulfate and triethanolamine myristate in water provides a good starting point. Alkanolamine condensates are also being used. Also illustrative is the following formula, suggested by Davies(40) for making a shampoo jelly:

	parts
Calcium alginate	2.00

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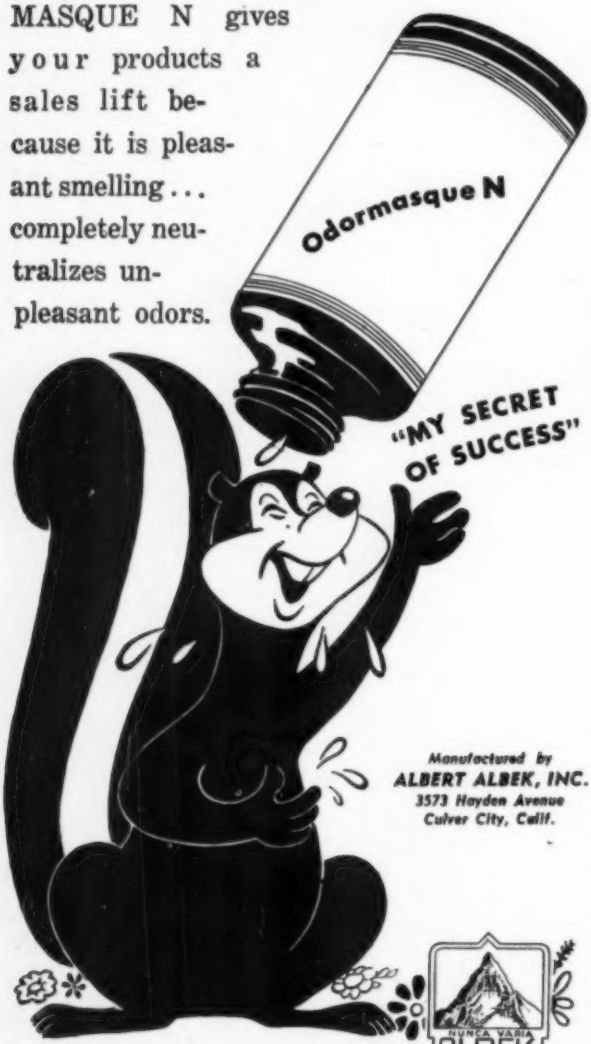

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	parts
Sodium citrate	1.00
Triethanolamine lauryl sulfate	10.00
Glycerine	5.00
Methyl para-hydroxy-benzoate	0.15
Perfume and color	sufficient
Distilled water, to make	100.00

Bar Soaps Used Still

THE fact that a substantial number of people use cake soaps for shampooing means that such products warrant more than passing consideration. As noted by Thomssen,(15) many soap makers recognize this continued popularity by featuring their toilet soaps as being suitable for both "the bath and shampoo." He points out, however, that special shampoo cake soaps are manufactured. Of these, the pure coconut oil and the tar soaps are probably the most popular. Pure coconut oil soap is made by the familiar cold process from a high grade lauric acid oil and caustic soda lye. If a milled soap is desired, some of this pure soap may be amalgamated and milled with ordinary toilet soap base to increase the coconut oil content to about 40 per cent.

If tar or other medicament is to be incorporated, these ingredients can be added to milled soaps. Thomssen states that it is customary to add about five per cent of soapmaker's grade of pine tar and to color the soap black or dark brown by the addition of a suitable soap color.

Levitt(41) has called attention to the fact, which is still true in many quarters, that hairdressers often prefer olive oil soaps for shampooing. However, olive oil is more often not used than used in making these soaps. Sulfur olive oil, or olive oil foots, which is solvent extracted from olive pulp residue, is quite commonly employed and yields a soap with all the desirable characteristics of that made from pure olive oil. This soap, he observes, is made by the full boiled, settled process.

Levitt also points outs that, in addition to bar form, olive oil castile soap is sold to the beauty trade in chips or powdered form. In this connection, it may be noted that one well known producer of shampoo makes something of a specialty of quickly-soluble castile soap granules to professional hairdressers.

Powdered Shampoos

THIS leads naturally to a consideration of powdered shampoos. These are of two main types. First are the detergent mixtures, used in conjunction with water like other shampoos. Second are the so-called "dry shampoos" which are powders rubbed into the hair and scalp in dry form to adsorb the soil. This is followed by thorough brushing to remove the powder and its absorbed dirt. Their use is relatively unimportant in today's market.

Preparation of shampoos of the first type is quite simple and consists chiefly of mixing and sifting the powders. The ingredients should be perfectly dry; the perfuming agent being rubbed up with or sprayed on one of the fillers prior to incorporation with the rest of the ingredients. Powdered soap, synthetic detergent or mixtures of these materials may be used as the base of these products. Various adjuncts are also included.

Typical of the soap-base type is the following simple formula:(5)

	parts
Powdered soap (milling base)	85
Borax, fine powder	5
Soda ash	10

Products based on synthetics can readily be made, according to one suggestion,(42) by perfuming a powdered type of fatty alcohol sulfate. If a somewhat more elaborate, perhaps less expensive, product is desired, it may be made from:

	parts
Fatty alcohol sulfate, powdered	20
Sodium sulfate, anhydrous	80
Perfume	sufficient

It is noted that the foaming effect of these preparations may be enhanced by incorporating powdered sodium hexametaphosphate.

A combined shampoo powder, as given by Jannaway,(20) consists of:

	parts
Sodium alkyl sulfate	6
Sodium pentaborate	2
Soap powder (coconut type)	4
Sodium carbonate, exsiccated	2

Of course, the ratio of the individual components can be varied, as desired.

In passing it should be mentioned that occasionally small quantities of coloring agents are incorporated in shampoo powders with the object of brightening or faintly tinting the hair. According to Hewitt,(43) for reddish brown shades, powdered henna is commonly used. For blonde hair, chamomile has been used, but with varying degrees of success.

A number of attempts have been made to push the "dry shampoos," but they have not proved very popular. Such products have been used in cases, such as illness, where the hair and scalp cannot be wet shampooed. In the main they consist of perfumed powdered mixtures of starch, kaolin, fuller's earth and similar inert materials. Sometimes, however, borax and various alkalies are used. One typical dry shampoo formula calls(18) for the use of a perfumed mixture of equal parts of starch and sodium bicarbonate.

Although they have been mentioned briefly, detailed consideration of medicated or tinting shampoos are beyond the scope of this discussion. Those who are interested will find further information in texts like those of Thomssen(15) and of Jannaway.(5) The technical(44) and patent literature-(45) also provides data on shampoo tints and brighteners.

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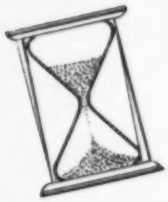

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Shampoo Award . . .

(*From Page* 32)

concentration of carbon tetrachloride was harmful, but the others . . . testified that it is generally recognized by medical men that the concentration must be 100 parts of carbon tetrachloride to 1,000,000 parts of air. Without knowing whether the concentration to which plaintiff was exposed in defendants' shop was of such density as to be harmful and without showing that carbon tetrachloride might be an efficient cause of plaintiff's *transverse myelitis*, the doctors testified that in their opinions the inhalation by plaintiff of carbon tetrachloride vapors in defendants' shop was the cause of the *transverse myelitis* from which she was suffering. This they did by a process of reasoning that, since plaintiff and the three other employees had the so-called preliminary symptoms of such poisoning and there was no other known cause thereof, plaintiff's disease was caused by such poisoning. • • •

"• • • The uncontradicted testimony of defendants' medical experts was to the effect that virus is a common cause of *transverse myelitis* and that generally it is the cause where the disease cannot be traced to other known causes. They testified that plaintiff's was such a case.

'Plaintiff failed in her effort to establish carbon tetrachloride poisoning as the cause of the *transverse myelitis* from which she is suffering, because it appears as a matter of law that the concentration to which she was exposed was harmless.'

"The doctrine of this case seems to us to preclude the right of recovery in the instant case. It is, however, contended by plaintiff that under the doctrines of *Pietrus v. Watkins Co.*, Minn., 38 N.W.2nd 799, she was entitled to have her case submitted to the jury. The Pietrus case involved the loss of hair which was claimed to have resulted from the use of Watkins shampoo. In that case the remaining contents of the shampoo bottle were not available. It was, however, shown that all of the shampoo made by defendant during December, 1944, had been condemned by the Federal Pure Food and Drug Administration because of its ingredients and it was in evidence that Mrs. Pietrus has gotten and used some of the shampoo that had been thus condemned. The medical testimony produced by her was "that soaps and other compounds with a high alkali content could cause irritation to the scalp and might cause a burn or destroy the hair follicles.' There was no analysis of the contents of the bottle of shampoo used by Mrs. Pietrus as there was in the instant case and the court was of the view that there could be recovery on the testimony of the plaintiff and her doctor in the absence of specific evidence based upon chemical analysis of the contents of the bottle of shampoo which she had used. There was evidence in that case that there was an attempt to withdraw the shampoo from the market and this was in the nature of an admission by the defendant that it contained deleterious substances. Thus the court among other things said:

'The evidence reasonably supports a finding that the bottle purchased by plaintiff came from a quantity which contained alkali to an extent which made it unsafe for its intended purpose. No tests of the amount of alkali contained therein had been made by defendant. No consultations had been held with experts as to the safety of the alkali content thereof. The federal pure food and drug administration demanded that this entire quantity be withdrawn from the market because of its excessive alkali content.

'Thereafter, defendant was required to reduce such content so as not to exceed a pH 10, although some of this quantity had an alkali content as high as pH 12. The inference can be drawn from the testimony of plaintiff's physician that excessive alkali in a hair shampoo would be harmful to the scalp, would cause burning thereof, and destruction of the hair follicles. • • •"

"We think the case is clearly distinguishable from the case at bar and we conclude that there was no substantial evidence sustaining the vital claim that the defendant's shampoo contained poisonous, infectious, injurious and deleterious materials and chemicals. It results that the court should have granted defendant's motion for a directed verdict and not having done so should have granted defendant's motion for judgment notwithstanding the verdict. The judgment appealed from is therefore reversed and the cause remanded with directions to dismiss the action."

Soap Progress

(*From Page* 30)

methods of separation have probably just scratched the surface as yet. Synthetics may be expected to reach proportions where they will be used pound for pound with soap. Methods and control will become more complex and the full application of present methods of instrumentation will very probably convert the whole industry to continuous methods. Very likely some of these items will be accomplished in the next twenty-five years.

Washington . . .

(*From Page* 78)

$1.40 an hour for work on Government contracts. The 85c rate has been set for cleaning and polishing preparations, as well as insecticides and fungicides.

The $1.15 minimum applies to workers on "industrial and refined base chemical products," except in the ten Southern states where the floor is 95c. Order takes effect January 23, 1951.

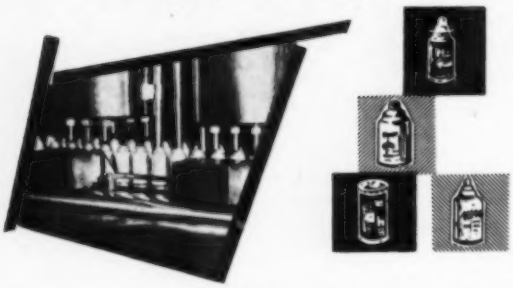
—— • ——

New Snell Mexican Firm

Formation of Foster D. Snell de Mexico, S. de R.L. of Apartado 20.609, Mexico City, was announced recently by Foster D. Snell, Inc., New York. The new firm, of which J. Carner and J. Sperling are in charge, is confining its activities to consulting, development and engineering problems in Central America, particularly in Mexico.

Dr. Foster Dee Snall, head of the New York consulting firm bearing his name, was recently appointed to the advisory commission in chemical technology of the State University of New York Institute of Applied Arts and Sciences.

5 CHECK POINTS ON aerosols



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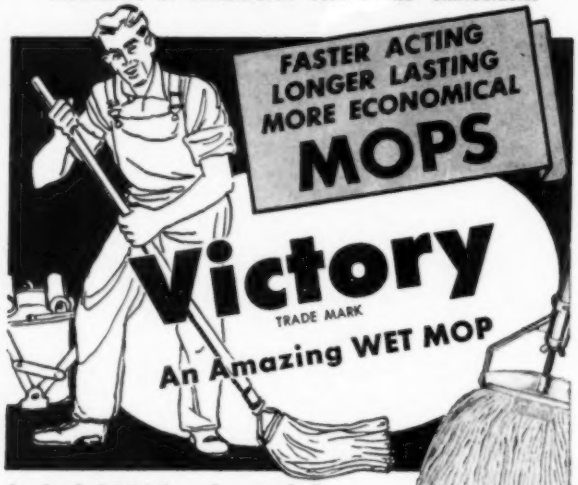

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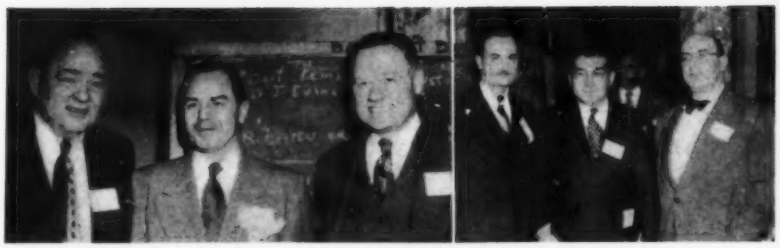

CSMA Meets . . .

(*From Page* 101)

der the provisions of the Federal Food, Drug and Cosmetic Act, was mentioned in his report on the Spray Residue Hearings and the Delaney Committee's investigation of the use of chemicals in foods by John D. Conner, general counsel for Chemical Specialties Manufacturers' Association.

In substance, according to Mr. Conner, the bill would subject a wide range of chemicals to a pre-marketing application and approval comparable to that required for new drugs under section 505 of the Federal Food, Drug and Cosmetic Act. It would embrace within its scope a wide range of insecticides, fungicides and other chemicals "intended to be used as a pesticide or for other purpose in producing, processing, packing or holding food if such use is likely to result in contamination of such food . . ." if it is not recognized as being safe. In Mr. Conner's opinion the use of quaternary ammonium compounds for sanitizing food utensils and the use of household sprays around foodstuffs would bring those products within the scope of the definition.

There may be room for honest difference of opinion as to whether the present statutory provisions of the Federal Insecticide, Fungicide and Rodenticide Act and the residue tolerance provisions contained in section 406 of the Federal Food, Drug and Cosmetic Act assure against any possible injury to the public health from the use of new insecticides or fungicides, Mr. Conner said. However, he added, if both of these laws are fully enforced there will be no possibility of injury to public health. If such a possibility exists, Mr. Conner advised, the logical way to eliminate the danger is through amendment of the Federal Insecticide, Fungicide and Rodenticide Act. This would not place the marketer under any undue burden such as would exist were he to submit the same information to two federal agencies, with resultant dual and overlapping jurisdiction.

Fly Resistance Talks

THE problem of fly resistance to insecticides was covered in a number of papers. One of the most interesting approaches to the problem was described in a paper "Studies on Insecticide Resistant House Flies in New York" by David Pimentel, H. H. Schwardt, J. E. Dewey and L. B. Norton of Cornell University. The "strip technique" involving the spraying or dipping of a roll of screen wire in insecticide and tacking strips of the wire to the ceilings of barns was described and is discussed more fully in an article beginning on another page in this issue. (See page 102.)

"House flies are capable of developing resistance under certain conditions, not only to practically all of the chlorinated hydrocarbons, but even to pyrethrum," it was stated in a paper by W. M. Upholt, senior scientist of the Communicable Disease Center, Public Health Service, Federal Security Agency, Atlanta, Ga. "The substitution of new insecticides has not shown a great deal of promise insofar as the future of fly control is concerned," the speaker pointed out, since flies that are resistant to DDT will more readily develop resistance to other chlorinated hydrocarbons.

The importance of sanitation in solving the fly resistance problem was stressed in the Upholt paper, "Significance to the Insecticide Industry of Fly Resistance." The U. S. Public Health Service will press for a campaign of sanitation for fly control supplemented with chemicals when necessary, the speaker stated. He added: "The insecticide industry should support and strengthen such a campaign since it may mean a stabilization of the market for fly sprays if it is successful.

Pointing out that acquired resistance in insects is no new phenomenon in entomology, Mr. Upholt stated that "resistance to insecticides is not universal among house fly populations." Resistance to dieldrin may be high in some areas and not be encountered elsewhere. Strains of flies in which resistance was not sufficient to be of any practical concern from the control standpoint were also found in "many strains," he stated.

The discovery of insecticide resistant flies, rather than the development of DDT, as once was thought, seems to be a threat to the insecticide business. The rapid development of resistance to new products has made the industry completely dependent upon the rapid and expensive production of ever-new specialty items, Mr. Upholt said.

The use of dieldrin for fly control in 1951 was discussed by C. C. Compton, entomologist for Julius Hyman & Co., Denver. He stated that dieldrin will be in commercial production in 1951, although an acute shortage of the material is anticipated. However, suitable quantities will be made available for fly control activities in 1951. Its use for fly control in outdoor situations on an area-wide basis by city, state and federal agencies has been recommended by the U. S. Public Health Service. Dieldrin will not be available in small packages for over-the-counter sales in 1951, Mr. Compton stated, adding that the use of dieldrin for the strip-method of fly control may expand in 1951. The program is still open for commercial exploitation and the degree to which it can be developed by market-time in 1951 remains to be determined by marketing ingenuity and the attitude of labeling officials, Mr. Compton declared.

In a discussion of the merits of hypochlorites vs. quaternary type germicides, John W. Klimek of Ster-

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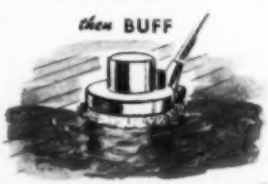

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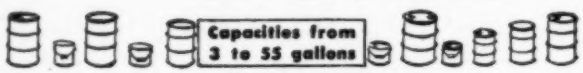

ling-Winthrop Research Institute, Rensselaer, N. Y., made the point that: "a few quaternary ammonium germicides are superior, some are essentially useless, and many are strictly middle-class. The consumer should make his choice of germicide only with full knowledge of its properties with respect to his particular needs." He also pointed out that the activity of useful quaternary ammonium germicides can be protected or even enhanced by the addition of a compatible inorganic sequestering agent or organic chelating agent. There are many problems in which the detergent value of such agents makes their use desirable, but such additives are not essential to the usefulness of the quaternary ammonium germicide, except under very rare circumstances, Dr. Klimek pointed out. In the vast majority of cases, he said, quaternary ammonium germicides will accomplish what they are intended to accomplish under recommended conditions of use.

Admitting the defects of the hypochlorites: odor, corrosion, irritant and neutralizing effect of organic contaminants, Vladimir Dvorkovitz of Diversey Corp., Chicago, pointed out that these are secondary defects, whereas criticisms of the quaternaries are on "the central prime fact—the ability and conditions necessary to kill bacteria." His comments were in a paper, "Hypochlorites vs. Quaternaries, Some Practical Conditions," by him and C. K. Crocker of Diversey Corp. He indicated that the main issue of the controversy, whether quaternaries actually kill bacteria and under what conditions they are active, had developed to the point where many different tests are being proposed for the evaluation of quaternaries.

In a discussion of "The Quaternary Ammonium Detergent-Sanitizers," George R. Goetchius of Rohm & Haas Co., Philadelphia, stated that the laboratory evaluation of the bactericidal effectiveness of detergent sanitizer formulations presented certain difficulties. The test methods which are currently in use in most laboratories fail to make a realistic approach to this problem," he stated. Mr. Goetchius further expressed the belief that "the degree of killing of bacteria which are freely suspended in liquid menstrum bears but little relationship to the number of bacteria which may be destroyed when contained in a milk film adhering to the inner surfaces of milking machines." "For this reason," he stated, "the 'rubber strip test' was developed." Mr. Goetchius then went on to report on the use of detergent-sanitizers in the dairy industry, which he described as the "greatest advance" in that industry since pasteurization.

"The chlorine-containing compounds were noteworthy in achieving a considerable degree of sanitation on the dairy farm and in milk handling plants. But one of the characteristics of progress is that we are never content with early improvements but are constantly striving to find something better. The chlorine-containing compounds presented certain disadvantages which have been eliminated . . . with the application of a newer discovery—the quaternary ammonium germicides," Mr. Goetchius said.

Advantages to be derived from the use of hypochlorite sanitizing solutions were listed by William A. Hadfield of Pennsylvania Salt Manufacturing Co., Philadelphia, in a paper bearing the title: "The Hypochlorite Interests." Mr. Hadfield stated that the hypochlorite sanitizing solutions are: 1.) efficient bactericides for sanitizing all clean food handling and processing equipment; 2.) easily tested by the farmer, dairy plant operator and public health officials; 3.) unaffected bactericidally by hard water salts and the presence of alkali and anionic cleanser residues remaining on dairy equipment; 4.) decomposed by milk and dairy products when a sanitized utensil is used for handling products; 5.) of low cost to the user and 6.) widely accepted as sanitizing agents for all food processing and handling equipment.

IN a symposium on the subject of problems in purchasing water emulsion floor waxes, Warren A. Hough of the Travelers Insurance Co., Hartford, Conn., declared that in the course of the last 15 years there has been an enormous improvement in the general safety level of water emulsion waxes. A device for measuring slip was described by Mr. Hough. The essential feature of the device is a steel disc, which when released from a pendulum arm arrangement slides across the floor surface. The distance the disc travels from the point at which it is released at the bottom of the arc of the pendulum is measured from a number of different angles, and the measurements are averaged.

Patrick Curtin of the maintenance section, United Nations, Lake Success, N. Y., described the problems pertaining to floor care at the U. N. site. He stressed the need for training maintenance people, and advised that a floor surface should be cleaned before it is waxed. He also made the point that the choice of a wax for floor surfaces should be determined by the durability of the wax and its anti-skid qualities, as well as by the ease with which it can be maintained.

A. B. Moore, buyer of drugs and chemicals for the Department of Purchase, City of New York, another participant in the symposium praised the industry for the progress it has made in improving its products. He discussed some of the effects the present emergency may have on the formulation of floor waxes, adding that "water emulsion floor wax will be far from the bottom of the list of essential items" should conditions warrant imposition of stricter and more far-reaching controls. The problem of establishing standards of water emulsion waxes was touched on by Mr. Moore. He declared that "both the buyers' and the manufacturers' costs of doing business can be lowered if (they) work to reduce the multiplicity of varying requirements in the specifications for products (manufacturers) are now called upon to furnish."

His company judges floor wax products by their ease of application; toughness; appearance and cost—and most important — by their lack of slipperiness, Roy Varner of Penn Mutual Life Insurance Co., Philadelphia, stated in his contribution to the symposium.

Apart from the difficulty of standardizing on one floor wax for

(*Turn to Page* 133)

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TRADE NEWS

Johnson Building on Coast

A $200,000 office and warehouse building is being built by S. C. Johnson & Son, Inc., Racine, Wis., in the central manufacturing district of Los Angeles. The 15,255 square foot structure is scheduled for completion by next March. Although Johnson does not have a Los Angeles manufacturing plant, it is understood that the firm is planning to erect a branch plant on a 3¼ acre tract in the central manufacturing district.

New Chem. Specs. Firm

The establishment of a new chemical company to produce and sell floor waxes, polishes, insecticides and detergents was undertaken recently with the incorporation of Northwoods Manufacturing Chemists, Inc., Marinette, Wis. The firm was incorporated by 15 Marinette, Peshtigo, Wis., and Menominee, Mich., business and professional men. C. W. Hoeper of Menominee is president, and J. Varnell Tate of Marinette is secretary-treasurer of the new organization, which has a captialization of 400 shares of $100 par value stock.

Rohwer Defense Assistant

Dr. S. A. Rohwer of the U. S. Department of Agriculture, has just been named special assistant for defense in the Agricultural Research Administration by Dr. P. V. Cardon, ARA Administrator. In his new position Dr. Rohwer will be the Administrator's special representative in spearheading ARA defense efforts. He will represent the administrator in relationships with the Production and Marketing Administration under the Defense Production Act and related executive and administrative orders; and activities coming within the purview of the National Security Resources Board. He will be ARA liaison officer with the Federal Civil Defense Administration, and with the Munitions Board and the Research and Development Board of the Defense Department.

During World War II Dr. Rohwer presented the needs for insecticide chemicals to the War Production Board, representing the Nation's farmers and the insecticide industry. For his service during the war he was awarded the Superior Service Award by the Secretary of Agriculture in 1947. Dr. Rohwer is a native of Telluride, Colorado. He attended the University of Colorado which honored him with a Doctor of Science degree in 1948. He has been with the Department of Agriculture since 1909.

S. A. ROHWER

G. V. McCarthy Dies

George V. McCarthy, 57, traffic manager for Liquid Veneer Corp., Buffalo, N. Y. floor finishes manufacturing firm, died Dec. 8. He had been with the firm for the past 10 years.

Delaney Hearings End

Hearings of the Delaney committee investigating the use of chemicals in foods ended Dec. 15, without hearing representatives of the U. S. Department of Agriculture. It is understood that members of the committee have recommended a continuation of the hearings in the next Congress, meeting this month, at which time U.S.D.A. officials will be able to testify.

Cutting short of the hearings was necessitated by the fact that there was insufficient time before the first of the year for the committee, which goes out of existence automatically on that date, to reveal its record and prepare its report for Congress.

Purcell Joins Pearson & Co.

John W. Purcell, formerly a vice-president of the Prentiss Drug & Chemical Co., New York, and associated with the sales end of that firm for fifteen years, joined Pearson & Co., Mobile, Ala. January 1 as general sales manager. The Pearson company manufactures and distributes insecticides, fungicides, stock specialties and legume inoculants in the southern market. Mr. Purcell resigned from Prentiss on December 1 last.

Partee in New Bruce Post

W. W. Partee, for the past several years sales manager of the household products division of E. L. Bruce Co., Memphis, Tenn., was recently appointed manager of the new products development department of the company. This is a new department established to coordinate the findings of the Bruce research laboratory and market surveys. Mr. Partee has been with the firm in various executive capacities for the past 25 years.

Frederick to MCA Board

Dr. D. S. Frederick, vice-president of Rohm & Haas Co., Philadelphia, was recently elected to a newly created directorship of the Manufacturing Chemists' Association.

New Reilly Tar Plant

Reilly Tar & Chemical Corp., Indianapolis, manufacturers of coal tar products, formally opened a new plant, Dec. 4, at Lone Star, Morris County, Tex. The new plant, the fifteenth in the U. S. operated by Reilly, is using the entire output of tar from the by-product plant of the New Lone Star Steel Company's cast iron pressure pipe factory, which was dedicated in a dual ceremony the same day. Present capacity of the new Reilly factory is 360,000 gallons of tar a month.

At the dedication ceremonies, Leon H. Keyserling, chairman of the Council of Economic Advisers (to President Truman) was the guest of

honor. Other guests included the governors of Texas, New Mexico, Oklahoma, Louisiana, Arkansas and Mississippi. Peter C. Reilly, Jr., president of Reilly Tar & Chemical Corp., and G. B. Edwards, general manager, also participated.

George H. Jackson is plant manager of the new Reilly plant, and Charles L. Slover is the firm's sales representative in Dallas.

New "Air Disinfector"

A new "air disinfector" based on the use of ultra-violet rays was announced recently by Roy C. Stove & Co., Chicago. The device, known as the "Air-Tron Louvered Upper Air Unit," is said to be suitable for treating the atmosphere of public gathering places.

PCO Conference Dates

A three-day short course on pest control, sponsored jointly by the department of entomology of Oklahoma A. & M. College and the Oklahoma Pest Control Association, will be held at the college, Stillwater, Okla., Feb. 1, 2 and 3. The National Pest Control Association will be represented by its president, J. Edwin Sameth of Western Exterminating Co., Newark, N. J.; William O. Buettner, executive secretary, and K. C. Bell, regional director of N.P.C.A.

On the same dates, the Eleventh Annual Eastern Pest Control Operators' Conference will be held at the University of Massachusetts, Amherst.

The 15th Annual Pest Control Operators' Conference will be held at Purdue University, Feb. 5-9.

Other Pest Control Conferences scheduled for 1951 include: The 11th annual conference at the University of Louisiana, Baton Rouge, Jan. 29-31; Pacific Northwest Regional, Mar. 5-7 (tentative); Fifth Annual Short Course, Pennsylvania State College, State College, Pa., Mar. 7-9; Ninth Annual Canadian, Ontario Agricultural College, Guelph, Ont., May 7-9.

The nineteenth annual convention of the National Pest Control Association will be held at the Hotel Statler, Boston, Monday through Wednesday, Oct. 29-31.

Pennsalt Sales Shift

The placing of its six sales departments under the supervision of two assistant general sales managers

Fabian Bachrach Photo

ARTHUR G. TUNTSTALL, JR.

was announced recently by Pennsylvania Salt Manufacturing Co., Philadelphia. Appointed to these newly created positions and reporting directly to William P. Drake, vice-president and general sales manager, are Arthur G. Tuntstall, Jr., who is supervising the B-K and household products, laundry and dry cleaning and maintenance chemicals departments and R. S. Roeller, who has general supervision of heavy chemicals, special chemicals and agricultural chemicals departments.

The sales departments continue to operate as heretofore. Under the change in sales administration, Mr. Tuntstall has general supervision of sales of chemical specialties to the service industries, food processors, other light industry and of consumer products. Mr. Tuntstall studied chemistry at the University of Pennsylvania and later took specialized business courses at the Wharton School. At one time he was production manager for American Home Products Co., and subsequently organized his own company to manufacture and package chemicals. In this connection he became associated with Pennsalt as a consultant, joining the firm in 1946.

Mr. Roeller has charge of sales of bulk or tonnage chemicals for manufacturing industry. Previously, he was sales manager of the heavy chemicals department, in which capacity he continues. He has been with the firm since 1922 and is a member of the National Production Authority's Alkali-Chlorine Committee.

Goldberg on Part Time Basis

Melvin Goldberg of Pesticide Advisory Service, New York, who was recently appointed as a consultant to the Production and Marketing Administration, U.S.D.A., is working on a part time basis.

New Westvaco Laboratory

A new laboratory that will accommodate a staff of 25 for research and development work on phosphates is nearing completion at the Carteret, N. J., plant of Westvaco Chemical Division, Food Machinery & Chemical Corp., New York. At the same time the firm announced that H. H. Young, formerly an instructor in chemistry at Williams College, has joined the firm as group leader in charge of sales laboratory activities at the Carteret laboratories.

R. E. Purcell, who received an M.S. degree at Purdue University, has joined the group as a research chemist.

SAACI Nominators' Slate

The following slate of officers and directors of the Salesmen's Association of the American Chemical Industry, Inc., for 1951, was announced recently by the nominating committee: president, Paul W. Hiller, Innis, Speiden & Co.; vice-president, Edward A. Bush, Bush Aromatics, Inc.; treasurer, Robert J. Milano, Millmaster Chemical Corp., and secretary, Warren F. Schumacher, J. T. Baker Chemical Co.; for board of directors for three years, John F. Henry, Adams-Henry Chemical Co.; and James E. Spencer, Harshaw Chemical Co., and director for two years, John J. Butler, West Virginia Pulp and Paper Co., all of New York.

Over 900 members and guests of the association attended the annual Christmas party at the Hotel Astor, Dec. 13. This was the largest turnout for the affair in the history of the association.

The next meeting of the Salesmen's Association will be held at the Hotel Roosevelt, New York, Thursday night, Jan. 25. Newly elected officers will be installed at the meeting.

NSSA Emergency Aids Listed at N. Y. Meeting

THE activities of the National Sanitary Supply Association on behalf of its members during the present emergency period and in the event the situation grows more critical were discussed in detail at a meeting of New York area members of the N.S.S.A., Dec. 1, at the Hotel Martinique, New York. The most important step taken by the association to acquaint government officials with the sanitary supply industry and its problems was the mailing of 200 copies of a 15 page survey of the industry to all administrative heads in Washington, and to all key personnel of record. In addition to explaining the nature and purpose of the survey, Leo J. Kelly, executive vice-president of the N.S.S.A., told of the booklets and sales training films recently completed or about to be issued by the N.S.S.A.

Besides Mr. Kelly, Al Candy, Jr., NSSA president and head of Candy & Co., Chicago, Searcy Ridge of Gateway Chemical Co., Kansas City, vice-president, Walter O. Krebs, American Standard Manufacturing Co., Chicago, treasurer, Carl Lien, Lien Chemical Co., Chicago, former president and director, and Jack Kahn of Windsor Wax Co., Hoboken, N. J., regional vice-president, were present for the meeting.

Mr. Kahn, chairman for the affair, presided. In his opening remarks, he pointed out that among the problems facing the industry are higher prices, difficulty in obtaining of scarce materials, notably metal goods, and delays in having orders filled. He pointed out that while the situation with regard to obtaining scarce goods was not so critical in the New York area, due to the large number of manufacturers located in the vicinity, it was much more serious in other sections. He also mentioned that the demand is greatest for items that are hard to secure. For this reason he suggested that distributors try to shift the emphasis in selling to products that are available. This will help to build sales and result in greater profits, Mr. Kahn said.

Following his introductory remarks, Mr. Kahn introduced the officers and directors at the meeting, pointing out that a number had stopped off on their way from a similar meeting the evening before in Boston.

Mr. Candy, president of the N.S.S.A., said that he was very much impressed by the turnout for the meeting, stating that it was about double a similar one he had attended in New York a few years ago. "This is real progress," he said.

Carl Lien, immediate past president of the association, the next speaker, stressed the importance of the regional meetings. He said he had gotten a great deal out of the meetings he had attended, urging members to take notes. He was particularly impressed by the sales training aids offered by the association, he said.

Leo Kelly, executive vice-president of the National Sanitary Supply Association, opened his remarks by paying tribute to the officers and directors for the time they had taken out from their businesses to "work and worry about the association." As a result, he said, the industry has grown to a stature of which N.S.S.A. members can be proud. He termed the industry a "health adjunct."

The cooperation of the association's members in contributing ideas to such booklets as "Survey and Sell" was singled out for mention by Mr. Kelly. He pointed out the value of the booklet as an aid in training salesmen. The sales training manual, which the association's board voted $2250 to produce should be out shortly, Mr. Kelly stated. The manual is slanted toward the sanitary supply industry, and was held up in coming out as a result of the Korean situation.

The 15-page survey of the sanitary supply industry was sent to key people in Washington, including Stuart Symington, of the Department of Defense, the Security Resources Board and to all field offices of the Department of Commerce. In this way, Mr. Kelly stated, it is hoped to establish a case for the sanitary supply industry in the national economy.

In the covering letter, which was read by Mr. Kelly, it is pointed out that the industry "provides the products and services that make better public health possible. In addition, it provides the skills and knowledge necessary to achieve the best results with the least possible expenditure of labor and materials," the letter continues. It further states: "This vital industry that does so much to help better the public health—that contributes so greatly to the maintenance of the morale and efficiency of our people, whose supplies and skills would represent a first line force in undertaking the necessary mass decontamination in the event of atomic or bacterial attack upon our cities—requires recognition and assistance so that at least minimum quantities of needed materials and products are made available."

Accompanying the letter was preliminary data prepared by the association to assist government officials in the determination of equitable allocations, regulations and priorities.

The data sent to government agencies including the National Production Administration shows that the average sanitary supply dealer does approximately the following percentages of business with the establishments shown:

hospitals and infirmaries, 11.64 per cent; schools, colleges, universities, 18.88 per cent; industrial processing and manufacturing plants, 19.40 per cent; restaurants, 8.33 per cent; hotels, motels and rooming houses, 6.11 per cent; food processing plants, 4.10 per cent; dairies and creameries, 3.40 per cent; garages and filling stations, 5.16 per cent; state and local municipal buildings and institutions, 10.41 per cent; office buildings, 6.80 per cent; retail stores, 5.77 per cent.

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quirements of the sanitary supply industry for the following products were shown as follows for firms reporting, for all member firms (projected) and for all industry (projected):

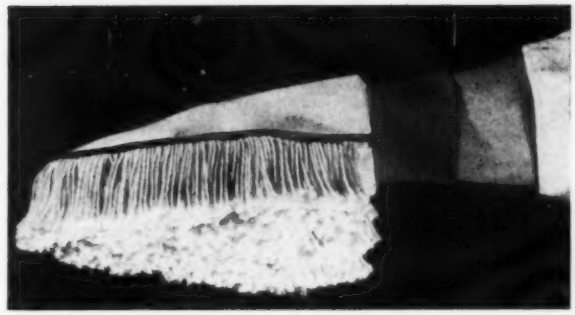
deodorant blocks (para), 335,314 lbs., 2,131,884 lbs., 10,659,420 lbs.; deodorant crystals, (para), 251,301 lbs., 1,507,806 lbs., 7,539,030 lbs.; disinfectants (all types), 423,579 gals., 2,541,474 gals., 12,707,370 gals.; dispensers, metal soap, 49,742 units, 298,452 units, 1,492,260 units; insecticides (all types), 196,209 gals., 1,177,254 gals., 5,886,270 gals.; soaps, base, 1,463,750 lbs., 8,782,500 lbs., 43,912,500 lbs.; soaps, liquid, 464,189 gals., 2,785,134 gals., 13,925,670 gals.; soaps, powdered, 5,251,465 lbs., 31,508,790 lbs., 157,543,950 lbs.; soaps, bar, 51,996 cases, 311,976 cases, 1,559,880 cases, all 100 bars per case; sprayers, insecticide, 32,612 units, 195,672 units, 978,360 units; wax, liquid, 126,215 gals., 757,290 gals., 3,786,450 gals.; wax, paste, 136,435 lbs., 818,610 lbs., 4,093,050 lbs.; wax, water emulsion, 977,247 gals., 5,863,482 gals., 29,317,410 gals.

The data given above, Mr. Kelly pointed out, was made available so that supplies of materials that might become scarce could be allocated equitably. It would also serve as an introduction for the industry to officials in Washington and as a step in securing the necessary recognition of the industry as a profession, Mr. Kelly said.

Mr. Kelly also reported that at the various area meetings he had attended recently, there was an increasing tendency for salesmen of distributing firms to be present. This was found to be more beneficial than detrimental, manufacturers reported, Mr. Kelly said.

The cooperative advertising campaign of the association as an aid in intercepting the trend toward direct selling by some large manufacturers and as a prestige builder for the industry was discussed by Mr. Kelly. Booklets and data on sanitation, sales training and selling hints were also singled out for mention by the association's executive vice-president. He complimented manufacturers on their cooperation in these ventures and stated that many regarded distributors as their district managers in their particular areas.

Mr. Kelly also reported on a questionnaire sent out to 26 of the largest realty corporations. Of these, he said, all replied that they used floor waxes; 96 per cent of the wax was bought by the individual buildings; 78 per cent had no brand preference. The three reasons cited for buying from a particular source were: 1) Satisfaction with that source; 2) the concern is reputable and can be depended upon; 3) can buy for a reasonable price.



A versatile, heavy-duty mitt, that can be used wet or dry, has been developed by American Standard Mfg. Co., Chicago. This mitt, used wet, takes the place of a sponge. More positive and faster in action, it is used for car washing as well as general washing, dusting and polishing of metal, wood, ceramic, plastic and other surfaces.

Reporting on the metal situation, which is bad, Robert Cooley of White Mop Wringer Co., Fultonville, N. Y., said that eventually the industry might have to return to wooden buckets. Big users are getting most of the steel, he said, adding that his firm had received orders for mopping sets in three weeks from all of its distributor customers. His firm is working around the clock trying to fill these orders and will continue to do so as long as metal is available. He said he didn't know when a stop order would be issued, but that when it was manufacture of wooden buckets would be resumed.

Mops may become more difficult to obtain as a result of the cotton textile situation and shortages of metal for bolts, nuts, etc., Walter O. Krebs of American Standard Manufacturing Co., Chicago, reported. He also pointed out that applicators might grow increasingly difficult to obtain as a result of the shortage of sheeps' wool.

The meeting concluded following a discussion of ways to combat the drum and metal container shortage. The question of deposits was discussed, with the point being made that unless some uniform policy were followed by manufacturers there would be resistance on the part of distributors to paying deposits of varying amounts.

Milk Sanitation Survey

An analysis of state and city regulations governing milk sanitation based on a survey of all states and 92 large cities in the U. S. recently was issued jointly by the U. S. Department of Agriculture and the National Research Council, National Academy of Sciences. Copies of the report: "Sanitary Milk and Ice Cream Legislation in the United States" may be obtained from the Informational Branch, Production and Marketing Administration, U. S. Department of Agriculture, Washington 25, D. C.

Bruce Advances Browning

Howard M. Browning was advanced recently to the post of sales manager of the household products division of E. L. Bruce Co., Memphis, Tenn. He has been merchandising manager since 1949, which activities he continues in addition to his new duties. He began his career as a salesman with the firm in 1945. Announcement of the change was made by E. L. Fellman, vice-president in charge of household products.

Givaudan Aerosol Lab.

Establishment of a special laboratory devoted exclusively to the formulation and testing of aerosol products was announced recently by Givaudan-Delawanna, Inc., New York. A bulletin describing the aims, purposes and workings of the laboratory, as well as the equipment and materials used, also is available. According to the bulletin, the laboratory has equipment in which all of the ingredients of the pressure bombs are placed in a mixture simulating those of manufacture, under pressure, but in a glass container. The attack of the various parts of the containers or the area of corrosion becomes visible. The bulletin is available on request by writing the company at 330 W. 42nd St.

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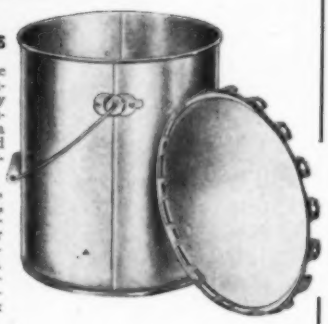

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Offered to you solely as a temporary and substitute package because of their more expensive method of manufacture, these containers will be found quite satisfactory for heavier and semi-solidified substances but are not recommended for thin liquids.

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Some Sales Territories Still Available for Representation

Edgar Ellis Resigns

Edgar R. Ellis for the past thirteen years associated with the sales division of Firmenich & Co., New York, associated American company of Firmenich of Geneva, resigned as of January 1 last. Mr. Ellis has not announced any future plans as yet.

Tieterna Joins Lien Chemical

C. J. Tieterna formerly associated with the Koch Chemical Co., Winona, Minn., has joined the technical staff of the Lien Chemical Co., Franklin Park, Ill., as chemist is charge of the production of sanitary chemicals. Carl Lien, a past president of the National Sanitary Supply Assn., is head of the company.

Jay Zucker Recovered

Jay Zucker, president of the State Chemical Co., Cleveland, manufacturers of soaps and sanitary chemical products, who recently underwent a serious operation has recovered nicely, according to a report from his office, and is now back at his desk regularly.

Delaney Committee Reports

A resolution to continue the investigation of the Delaney Committee into the subject of protecting the public against the possible contamination of foods by chemicals was contained in an interim report of the committee, issued Jan. 4th. "Increasing use of chemical additives in the production and processing of foods has raised a serious problem as far as public health is concerned," the committee warned.

An amendment has been proposed to the Food, Drug and Cosmetic Act which would require that chemicals such as insecticides, fungicides, herbicides, etc., for use on or in foods, would have to be checked and passed as safe for use by the Food and Drug Administration before their use would be permitted. The committee is apparently not anxious to rush into such legislation before hearing more evidence however. They concluded in their report that "in view of the far-reaching consequences of such an amendment, the committee is of the opinion that individuals and groups who would be affected by such legislation should be given further opportunities to present their views and to comment on proposed legislation before any specific recommendations are made to Congress."

Powell Pays Bonuses

Christmas bonuses of as high as 11 per cent of yearly salary were announced recently by H. Alvin Smith, president of John Powell & Co., New York. The bonuses, part of the firm's profit sharing program, brought to approximately $60,000 the total employee benefits for 1950. The 1950 bonuses issued to the firm's domestic employees were based on seniority, and ranged from 5½ to 11 per cent of yearly salary. It was the 20th consecutive year that the Powell company has issued such bonuses to its employees.

Britton ACS '52 Head

Dr. Edgar C. Britton, director of the organic research laboratory of Dow Chemical Co., Midland, Mich., was recently chosen president-elect of the American Chemical Society. He will serve in 1952. The 1951 president is Dr. N. Howell Furman, Russell Wellman Moore professor of chemistry at Princeton University.

Johnson Names Two

Fred M. Farwell, vice-president of IBM World Corp., New York, recently was named executive vice-president of S. C. Johnson & Son, Inc., Racine, Wis. He succeeds Jervis J. Babb, who was elected president of Lever Brothers Co., New York, last year. Mr. Farwell will take up his new duties on April 1.

The appointment of Hamilton F. Croft as head of the newly formed international division of S. C. Johnson & Son, Inc., was announced at the same time. He has been named international vice-president. Mr. Croft previously was acting general manager of the company, a post which he has relinquished. He continues as managing director of S. C. Johnson & Son, Ltd., Brantford, Canada, where he is making his headquarters. Mr. Croft has been with the Johnson company for 30 years. In 1949 he served as acting general manager of the firm's English subsidiary.

Noelck Joins Maas

Hal Noelck recently joined the sales department of A. R. Maas Chemical Co., South Gate, Calif., division of Victor Chemical Works, Chicago. Previously he was with Victor at the home office in Chicago and at their Mount Pleasant, Tenn., plant.

Fitch in New Rose Post

Keith A. Fitch, formerly with W. J. O'Connell & Associates, San Francisco, consultants in chemical and sanitary engineering, was appointed recently as director of the newly created sanitation department of Rose Exterminator Co., with headquarters in San Francisco. He is to organize and manage the newly formed department, which has been set up to provide inspection and advisory service for manufacturers and dispensers of food and for others for whom strict sanitary regulations are essential. He organized and administered such a program for Standard Brands, Inc., and for many years was an inspector with the Food and Drug Administration.

Pennsalt Aerosol Pesticide

Pennsylvania Salt Manufacturing Co., Philadelphia announced recently its entry into the aerosol insecticide field with a new 12-ounce bomb-type package carrying the trade name, "Knox Out." The addition of the aerosol unit to the line of "Knox Out" insecticides and weed killers for home and garden use rounds out its offerings in that field, the firm said. The newest member of the line produces a mist spray containing DDT, pyrethrum and piperonyl butoxide, designed to kill most common insects, including flies, mosquitoes, gnats, roaches, waterbugs, silverfish, fleas, bedbugs, ants, etc.

"Knox Out" aerosol insecticide comes in a self-dispensing can with a rubber valve-type opening. The new product is offered for domestic use by the B-K and household products department of the parent company and in other countries by Pennsalt International Corp.

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Sanitation Course

The Eighth Annual Dairy and Food Inspectors' and Sanitarians' School will be held at Michigan State College on April 10-13, 1951. Topics pertaining to sanitation problems will be discussed. Anyone interested may obtain full details and a copy of the program by writing Dr. W. L. Mallmann, Department of Bacteriology and Public Health, Michigan State College, East Lansing, Michigan.

Plant Maintenance Show

Cleaning materials and equipment and their applications are being demonstrated and discussed at the Plant Maintenance Show being held in Cleveland, O., Monday through Wednesday, Jan. 15-17. Various phases of maintenance are to be covered in discussion sessions.

Exhibits of maintenance products and equipment are being staged in the Cleveland Municipal Auditorium. The list of exhibitors includes:

Breuer Electric Manufacturing Co., Chicago; Doyle-Vacuum Cleaner Co., Muskegon, Mich.; Finnell Systems, Inc., Elkhart, Ind., Hercules Powder Co., Wilmington, Del.; Huntington Laboratories, Huntington, Ind.; S. C. Johnson & Son, Inc., Racine, Wis.; Kent Co., Rome, N. Y.; Koppers Co., Pittsburgh; Multi-Clean Products Co., St. Paul, Minn.; Oakite Products, Inc., New York; Rohm & Haas Co., Philadelphia; Sugar Beet Products Co., Saginaw, Mich., and West Disinfecting Co., Long Island City, N. Y., among others.

Two Million Aerosols Bid

Bids for two million twelve-ounce aerosol containers of insecticide have been called for by military procurement, closing January 23. The bid calls for pyrethrum or allethrin plus DDT in the usual aerosol formulation. An open meeting of aerosol manufacturers under the auspices of the Chemical Specialties Manufacturers Association with a view to facilitating supplying government needs of this and subsequent large orders for aerosols is reported to have been scheduled for January 22d at New York.

At press closing time, reports indicated that a restrictive order on metal cans and some other metal containers would be issued by Washington about January 18 or 20, placing sharp limitations on uses for metal packages, specifically tin cans.

Harvey A. Seil Dies

Harvey A. Seil, 68, president from 1921 until he retired in 1947 of Seil, Putt & Rusby, Inc., New York, died Jan. 5, at Paterson (N. J.) General Hospital. The former head of the firm which specialized in the analysis of organic insecticides, pyrethrum flowers, derris root, and cubé root, made his home in Rutherford, N. J. He is survived by his widow, Edna Wagstaff. Mr. Seil was widely known throughout the insecticide industry as the originator of the Seil Method for the determination of pyrethrins.

Protest Carnauba Prices

Carnauba wax prices, up from 61 cents lb. last June to $1.45 lb. Jan. 15, 1951, have brought protests and requests for a price rollback from floor wax and polish manufacturers to the Economic Stabilization Agency in Washington. Chemical Specialties Manufacturers Assn. in a recent protest to ESA requested a rollback of prices to those of last Dec. 1 (85 cents lb.) and imposition of price ceiling similar to that under Price Regulation No. 264 in World War II. The N. Y. Paint, Varnish & Lacquer Assn. has also protested the carnauba price rise and called for an investigation under the Federal Trade Commission Act, citing the inability of floor wax manufacturers to hold the price line in the face of present carnauba prices.

CSMA Meeting

(*From Page* 123)

buildings of the Bell Telephone systems in various sections of the U. S. and their differing climatic conditions, the problem of slip is of major importance, W. H. Joy of American Telephone & Telegraph Co., New York, stated. His company, which standardizes on building service supplies purchased for the Bell system by Western Electric Co., has two standard waxes: "regular" and "special." The first is a high carnauba content product designed to give maximum appearance, wear and soil resistance. The "special" wax sacrifices some of the features of the "regular" to gain added slip resistance. It is used mainly in northern regions, where the climate tends to be cool and dry.

Considerable experimentation with resin wax-free emulsions that may go far toward solving the slip problem is being done by his organization, Mr. Joy said. He also pointed out that his company "knows of no adequate method to evaluate wear and soil resistance, except by actual field tests."

The special approach required for hospital floor care was described by D. H. Palmer of the Hospital Bureau of Standards and Supplies, New York. In most respects, the speaker indicated, hospitals require a floor wax that combines the properties needed by all institutional users. The more common of these requirements are resistance to wear and scuffing, high softening point, resistance to water and commonly used liquids, stability at high and low temperatures, and ease in application and removal. Further requirements include satisfactory gloss and good overall appearance. "Above all, hospitals need a wax that is truly non-slip," Mr. Palmer said. In addition, the speaker pointed out the special requirements of hospitals include the development of oil applications to floors for the suppression of dust. The possibility of a manufacturer formulating a floor dressing material that will be sufficiently conductive to drain off any static electricity that may accumulate on objects in the operating room also was mentioned by Mr. Palmer.

The concluding feature of the meeting was a cocktail party and dinner on the evening of Dec. 5.

The 37th mid-year meeting of the association will be held at the Drake Hotel, Chicago, Monday, April 30 and Tuesday, May 1. The annual meeting in 1951 will be held at the Mayflower Hotel, Washington, D. C., Dec. 3 and 4.

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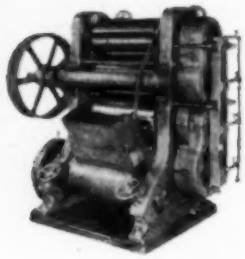

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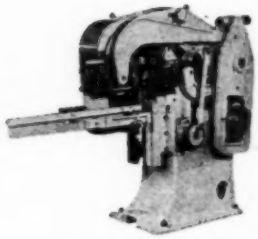

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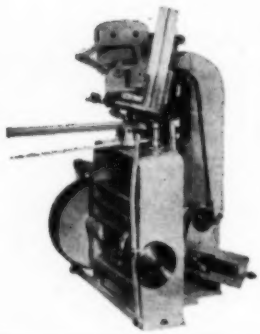

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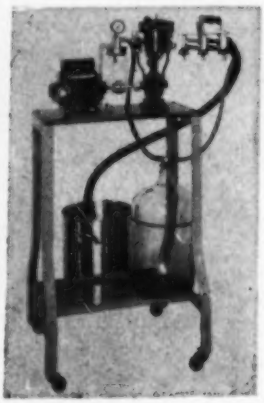

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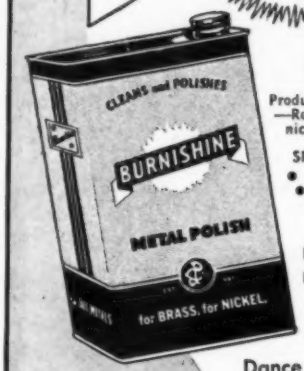

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FTC Closes Bostwick Case

The Federal Trade Commission announced recently that it would close without prejudice the case in which Bostwick Laboratories, Inc., Bridgeport, Conn., was charged with misrepresentation of four of its insecticides. The F.T.C. counsel supporting the complaint filed the motion to close the case.

S&S Holds Sales Meeting

A two-day sales conference, attended by representatives from all sections of the country, was held recently by Stokes and Smith Co., a subsidiary of Food Machinery and Chemical Corp., New York, at the S&S plant in Philadelphia. Carl E. Schaeffer, sales manager and William R. Huguenin, plant manager, arranged for the meeting.

Tippit Reliance P. A.

C. Carlisle Tippit, for the past three years manager of the order and planning department of Reliance Electric & Engineering Co., Cleveland, O., was recently appointed general purchasing agent of the firm. Walter H. Behnke of Reliance's applied engineering department since 1945 succeeds Mr. Tippit.

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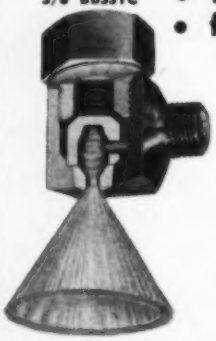

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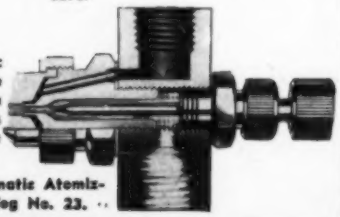

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Fly Control Methods

(*From Page* 112C)

the control given by the same toxicants applied by the overall or spot treatment methods. Strips treated with 15 per cent dieldrin concentrate gave good control of flies in six barns for an average period of 16 weeks plus or for the entire fly season. These six barns were treated early in the season just before the fly population had become heavy. Another barn had an exceptionally heavy fly infestation early in the season at the time of treatment with dieldrin strips, but effective control was obtained for the entire fly season. Dieldrin treated strips, placed in four other barns later in the season when the fly populations were heavy, gave good control of house flies throughout the rest of the fly season. The length of effective control afforded by the 15 per cent dieldrin treated strips was significantly better than the control given by strips treated with concentrates containing 15 per cent or more of chlordane, toxaphene or lindane.

In preliminary laboratory experiments flies were killed after resting only 5 seconds on screen strips which had been treated with 15 per cent dieldrin emulsifiable concentrate. After 15 per cent dieldrin treated strips had been in a barn for 17 weeks, pieces of screen were cut from a strip located over the center area of a barn. In subsequent laboratory tests, flies were killed after resting 2 or more minutes on these sections.

Milk samples from cattle in barns containing lindane treated strips were analyzed. Since the strips were treated and allowed to dry outside of the barns and then stapled close to the ceiling beyond the reach of the cattle no milk contamination was expected and this proved to be the case. (Table 6)

The authors believe that the strip method is the more promising of the two new treatment methods tested. Although milk was not contaminated by the spot treatment method, there seems to be even less chance for contamination by the strip method since the strips are treated with toxicants outside the barns and there is no possibility of toxicants drifting into the mangers. The strip method used one-half as much material as the spot and overall methods, to give comparable control. In addition the farmer does not have to use heavy spray equipment to effectively treat his barn by the strip method. While the strip method was extensively tested, and used by many farmers, the data presented represent the work of a single season in a northern latitude. It should not be inferred that it will be equally effective in all parts of the United States.

Summary

DURING the 1950 season, 117 dairy barns were treated by three treatment methods, using several organic insecticides in different formulations.

The importance of barn sanitation, which is often mentioned but seldom measured, was found to be great enough so that the period of control could be increased two or three times by proper care in waste disposal.

No difference was found in the period of control between barns treated one or two seasons with lindane. The groups of flies collected from the barns treated with lindane for either one or two seasons showed a low level of lindane-resistance. There was no difference in the level of lindane-resistance between the two groups of flies. Treatment of barns for two seasons with lindane did not affect the level of DDT-resistance.

In confirmation of the 1949 results, spot treatment by regular spraying procedures was found as effective with several insecticides as the overall treatment, with less chance of milk contamination.

It was confirmed that lindane wettable powder is less effective than the emulsion form.

Screen strips treated with heavy deposits of insecticides and suspended in barns were found to attract flies and gave as good control as the regular overall or spot treatments.

The strips treated with dieldrin gave outstanding results and controlled flies throughout the fly season. In addition the strips gave apparently complete freedom from milk contamination.

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Baumstark Moves

Harry A. Baumstark & Co., St. Louis, have announced recently that they have moved from their old address at 4030 Chouteau St. to 6801 Arsenal Street, St. Louis, 9, Mo.

To Alter Pesticide Claims

Stipulations were entered into recently by Cook Chemical Co., Kansas City, Mo., and American Chemical Co., Birmingham, Ala., and the Federal Trade Commission regarding pesticide product claims. Cook agreed to stop advertising that "Cook-Kill Bug Killer" is effective against all bugs and insects and is non-toxic or harmless to humans.

American Chemical Co. has agreed to discontinue representing that its product, "Hot Foot Mouse and Rat Killer," will kill all rodents instantly. Other claims the company says it will stop are that rodents killed by the preparation will "dry up" or will not putrefy; that bodies of dead rodents will not give off the usual odors incident to putrefaction, and that the product is not poisonous.

Cook Chemical Co. has been told by the F.T.C. to stop representing that its insecticide contains any ingredient which is not present in any competitive product. The company has also agreed to discontinue the claim that its preparation is the successor to or is more effective than DDT. It further agrees to refrain from representing that when poured on ant hills the product will kill all the ants in the hill.

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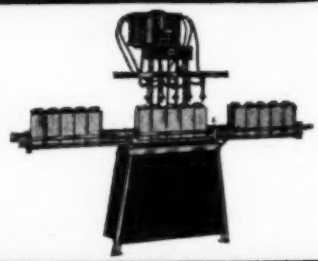

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TALE ENDS

COME January 31 and the largest band of soap and detergent manufacturers in U. S. history is scheduled to gather in New York for the annual industry meeting under the auspices of the Association of American Soap & Glycerine Producers. Large soapers, small soapers, fat ones, skinny ones, several hundred strong from every part of the country, they will converge on N. Y. at the end of this month. Roy Peet, Malcolm Miller and Frank Luther of AASGP, which runs the show, already have their feet braced.

• • •

A heretic is in our midst, gentle reader! Heat up the oil to boiling for Dr. Clyde Cummer, Cleveland skin specialist who recently stated, according to the *St. Louis Star-Times*, that some people take too many baths. Especially old people should go easy on the soap and water, says he. However, no mention of the ten year old brats who have a horror of washing behind their ears,—just old folks with thin skins. But if the good doctor made a practice of riding the N. Y. subway on Friday evenings, we have a feeling he willingly would eat his own words, even as said words might apply only to the aged.

• • •

To keep coyotes away from his young stock, an Alberta rancher laid a circle of naphthalene moth balls around his grazing fields. The coyotes came up to the naphthalene, sniffed, tried a different spot, sniffed again, and then scrammed. Where traps and guns had failed, moth balls triumphed. So now, other ranchers plan to do the same come next spring. Where in hell they are going to get the naphthalene is their problem!

• • •

We're in for a tough winter, according to Bill Buettner, the human dynamo who operates the affairs of the National Pest Control Association as secretary. He bases his recent contention on the fact that squirrels have been noted to carry heavy, bushy fur coats this winter. Maybe Bill is right and we have a tough winter ahead of us, but as far as the folks of Cleveland, Pittsburgh, Chicago, and other parts of the mid-west are concerned, they already *have had* a tough winter what with enough snow for two years behind them.

• • •

Knocked out by a virus infection, Leonard Oppenheimer, president of the Chemical Specialties Mfrs. Assn., spent the three days of the Association's recent 37th annual meeting in New York in bed at the New Yorker while Veeps Weirich and Fuld carried on. And while he lay helpless in bed, CSMA re-elected Leonard for another one-year term as head man.

• • •

Viva Mejico! Dave Lynch, demon manager of Velsicol's chlordane sales, speaking. After a two-month trip through sunny Mexico, visiting large cities and small, including some spots in the remote interior, Dave returns full of enthusiasm for our southern neighbor. A beautiful country, says he, even to the size and quality of the American roaches which inhabit the sleeping rooms of some of the smaller upland hotels, roaches which speak three languages and defy one openly to spray them with chlordane. Viva Mejico!

• • •

At long last, we have discovered a use for silver cups, the kind golf champs win. At the Ungerer annual plant Christmas party last month out in Totawa, N. J., Roger Fardin, maintenance super and winner of the Ungerer golf championship at the company tournament last fall, arrived on the scene toting his silver golf cup, previously donated and presented by Prez Ken Voorhees. Roger then filled said cup with whiskey and drank everybody's health,—all of which we consider a very pleasant and novel solution of the problem of what to do with golf cups.

• • •

The Peck kingdom is saved! G. P. Peck, founder of Peck's Products Co., St. Louis, now has a male grandson and the Peck name marches on. After a string exclusively of girls among the grandchildren,—the offspring of Leo, Woody and Al, the three sons who run the business,—the latter finally came through with a boy, Thomas. And now that the ice is broken, we'll gamble that future arrivals will be all boys. 'Twas ever thus.

• • •

Page Buck Rogers! When Monsanto Chemical wanted to repaint the smoke stack at its Everett, Mass. plant recently, did they build the traditional scaffold up the 150-foot stack? They did not. Plant manager, Russell Miller, called in a helicopter which flew Steeplejack George Burgess to the top of the stack where he simply leaned out the door and made fast his hooks, block and falls, etc. and soon was busy with his painting equipment. Time consumed,—a half hour. And that gentle reader, is one for the book!

Easy going . . .

WHEN we're snowed under with orders and selling is a lead-pipe cinch, that's when many a wisenheimer thinks it's time to cut down the advertising. It's easy to coast. But when the uphill sales pull begins again, that's when advertising done during the easy days really pays off. If you would keep on selling the field of soap and detergent products, insecticides, disinfectants, floor waxes, janitor supplies, etc., when things get tough again, then we suggest that you keep on advertising now in

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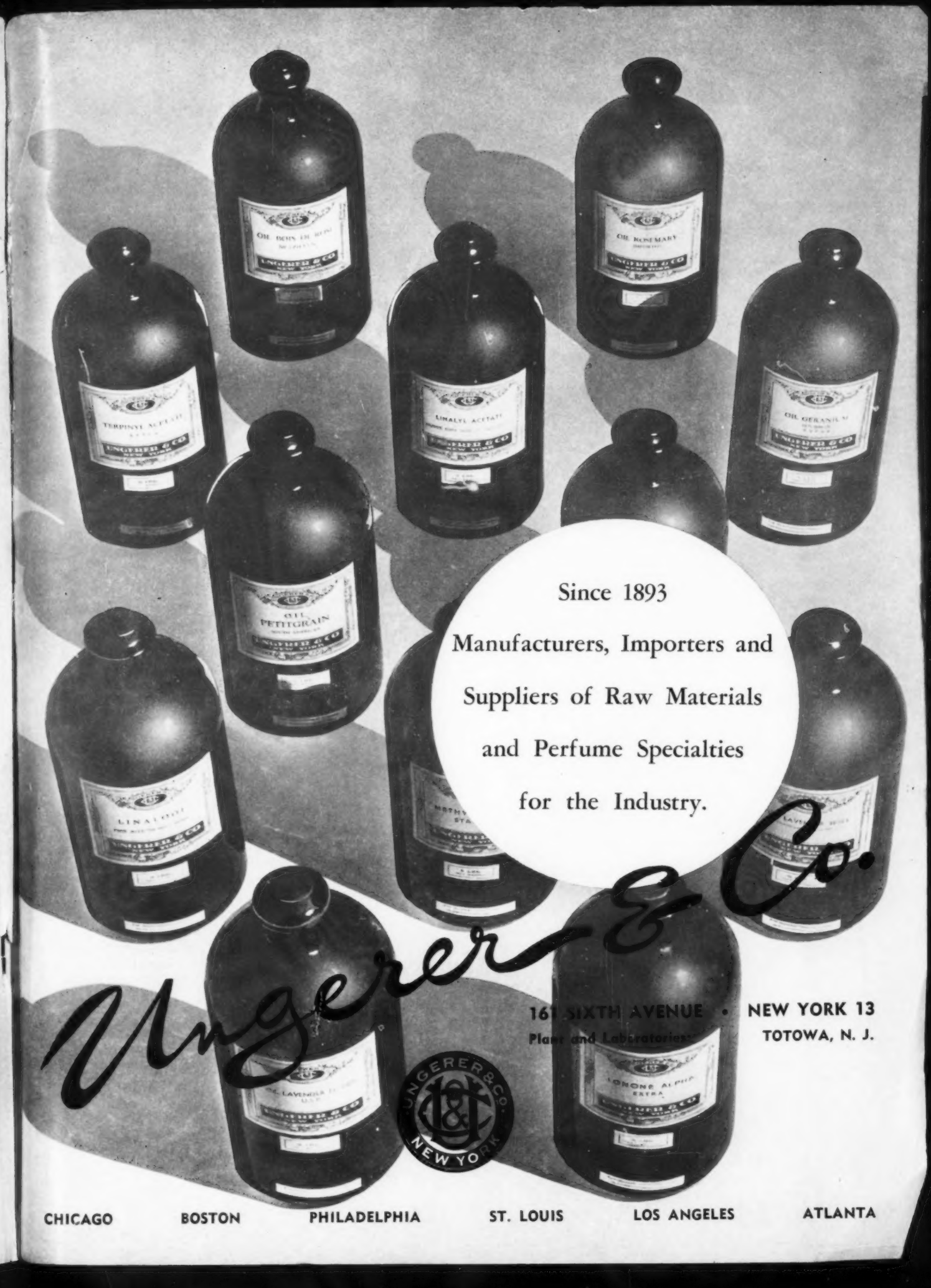
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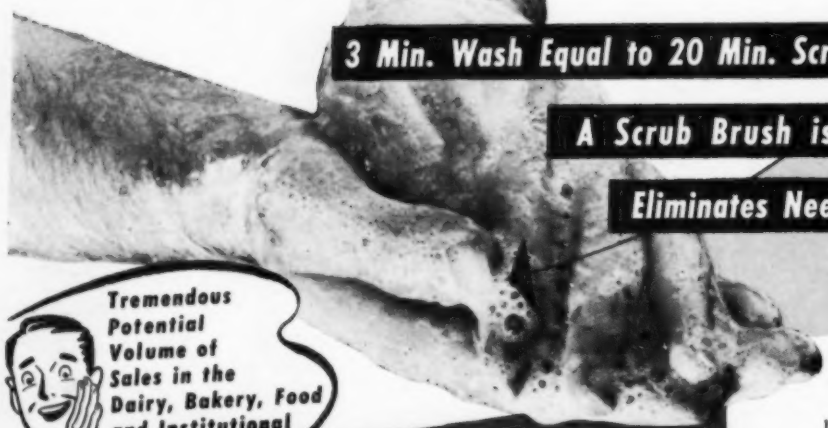

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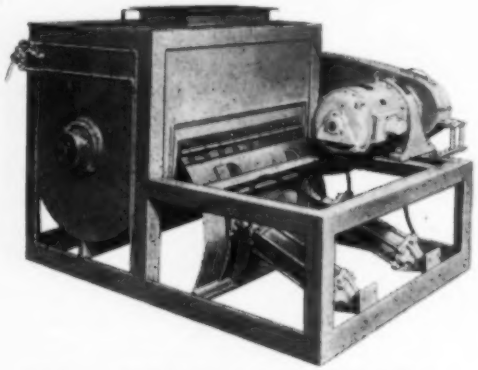

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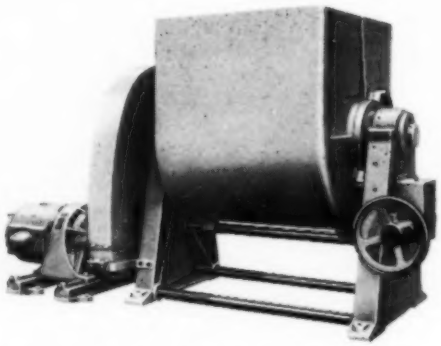

• Lehmann 260-400 lb. Tilting Type Amalgamators. Furnished in plain or stainless steel.

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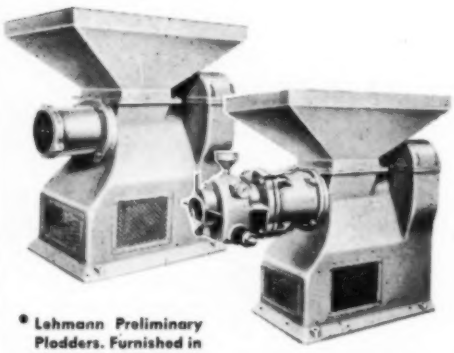
DURING this grave international crisis, every manufacturer should make all possible effort to strengthen the weak spots that exist in his production facilities. This may involve the replacement, reconditioning or modernization of important units of manufacturing equipment.

Improvement in mechanical efficiency usually saves manpower. And manpower is the crux of the Nation's defense problem. Armed forces and defense plants will take millions of men from civilian industry. Those remaining must be employed with utmost economy and common sense.

Look over your soap finishing machines now, with a critical eye. Are there any wasteful, high-cost units in your plant that should be replaced or reconditioned? If so, get in touch with us.

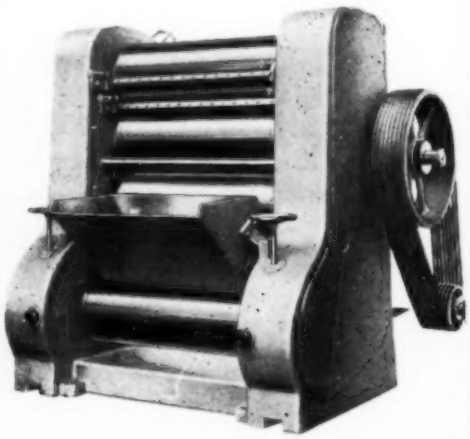
An industry operating at top efficiency is Democracy's most powerful weapon!

Send for descriptive bulletin of any machine shown here.



• Lehmann Preliminary Plodders. Furnished in plain or stainless steel. Worm sizes 8" to 14".

• Lehmann Finishing Plodders. Furnished in plain or stainless steel. Worm sizes 8" to 14".



• Lehmann 912-SA Five Roll Finishing Mill—Flake or toilet soap. Full line available.

LEHMANN

J. M. LEHMANN COMPANY, Inc.

MAIN OFFICE AND FACTORY: 548 NEW YORK AVE., LYNDHURST, N. J.

cause considerable trouble if the mills are left to self cleaning. Brass dies are another source of contamination, and soap removed from stamping operations should be checked as a potential source of introducing foreign particles. Since plodders cannot be dismantled completely for cleaning, inaccessible parts should be made of resistant metals. Streaks in soap due to oxidation of metal surfaces can be overcome to a large extent by making comparatively inaccessible inner surfaces of stainless steel, nickel clad steel or monel metal.

Refining operations to improve the color, odor, etc., of oils and fats tend also to destroy certain natural antioxidants originally present, thus reducing potential resistance to oxidation. It is, therefore, desirable to add certain agents described as inhibitors and antioxidants. The amounts of inhibitors used are relatively small, but greater than the amount present in the natural oil. In the case of soap, the amount of additive depends for one thing on the degree of unsaturation of the oils or fats used in the soap.

Various inhibitors have been recommended for the stabilization of fats. Inorganic substances include the sulfite, thiocyanate and hydrosulfite of sodium; sodium silicates having varying ratios of alkali and silica; the chloride, nitrate, and silicates of magnesium and also some tin compounds. Organic substances used as inhibitors include phenols, amines, and aliphatic alcohols, the latter obtained sometimes by the catalytic hydrogenation of fats. Some of the more complex phenolic substances, patented for use as antioxidants in fats and soaps, include parahydroxydiphenyl and parahydroxydiphenylether. Guaicol or methyl catechol has also been suggested as an inhibitor. *Soap Perf. & Cosmetics* 24, No. 1, 47-52 (1951).

Make-up of Print Paste for Soil Cloth

CHEMICALS contained in a printable soil paste for standard soil cloth are divided broadly into two groups: those that constitute the soil and those that are included to give a uniform composition with printing quality. The preparation of the mixture requires several steps, as indicated:

BLACK STOCK PASTE

Parts	
8.0	of ethyl cellulose is dissolved by soaking from 4 to 16 hours in
52.0	of Solvesso #3 and
4.0	of butanol. To this are added
16.0	of a lamp black and
20.0	of Spry to make a total of
100.0	parts.

The mixture is worked together by hand and then passed three times through a 3-roller water-cooled, Kent ink-grinding mill. It is then transferred to a previously weighed empty bottle, and the weight of the mixture carefully determined, as some loss is to be expected from the grinding operation. Now more Solvesso No. 3 is added to the bottle, the additional amount added being equal to 60 per cent of the net weight of the mixture actually recovered in the bottle. The contents of the bottle are mixed well with a strong rod, and the bottle is labeled "Black Stock Paste A."

STOCK THICKENING PASTE B

Parts	
2.0	of Keltex P Gum is sprinkled slowly into
64.7	of cold water while the mixture is being stirred in an Eppenbach Laboratory Homogenizer with the guard down, the speed being increased as the gum swells.
	In another container
3.3	of cornstarch is pasted in
30.0	of water, and this paste is then added to the Keltex P Gum paste and worked for 1 hour at the boil while being constantly stirred. The total amounts to
100.0	parts.

FINAL PRINT PASTE #26

Parts	
20.0	of Black Stock Paste A and
20.0	of Nujol are stirred together by hand.
	In a separate container
40.0	of Stock Thickening Paste B is diluted with
19.25	of water and then added to the Nujol—Black Stock Paste A mixture gradually with stirring. The stirring is continued for a few minutes with a highspeed laboratory mixer.
	There are then added in order
0.5	of oleic acid and
0.25	of morpholine. The stirring is continued for 5 minutes more to ensure complete homogeneity.
100.0	parts.

Synthetics as Inhibitors

Studies of the surfactants in the presence of, or in combination with, antiseptics indicate that the non-ionics inhibit fungistatic action. This effect is to be considered in the utilization of non-ionic detergents in pharmacy and cosmetics, as these preparations will tend to become moldy.

Cationics, with their strong germicidal properties, are often powerful antiseptics; the non-ionics have no such activity. Anionic derivatives in an acid medium have a certain bactericidal action against the Gram-positive micro-organisms. When an anionic agent such as sodiumlaurylsulfate is added to an antiseptic, a synergistic action is frequently obtained. Besides having no fungistatic action in themselves, the non-ionics stimulate the growth of several kinds of molds.

Tests on the behavior of three antiseptics in the presence of the detergents listed below indicated that all the detergents, with the exception of "Carbowax 1500," decreased the fungistatic action of antiseptic added. Detergents tested were: "Carbowax 1500," "Crilex 6," "11," and "16," "Span 20," "Gelatine," "Tween 60," and "80," oleic acid, sodium oleate, "Mannite," and "Cysteine." *J. Pharm. & Pharmacology* 2, No. 10, 685-691 (1950).

Anti-Foaming Action

Studies of the mode of action of anti-foam chemicals indicate that anti-foams act by reason of their surface activity and their ability to form a non-foaming surface. The anti-foam activity is enhanced by spreading of the anti-foam agent on the foaming liquid. There is a strong correlation between anti-foam activity and ability to spread. A liquid may show anti-foam activity even if it is completely miscible with the foaming liquid. *J. Soc. Chem. Ind.* 69, No. 12, 363-368 (1950).

The printing of soil paste is covered in specification 51 S 47 (INT) of the Bureau of Ships. C. S. Draves and O. L. Sherburne at the proceedings of the American Assoc. of Textile Chemists and Colorists (Sept., 1950).